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BRITISH BIRDS.

VOL. III.

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A

HISTORY

OF

BRITISH BIRDS.

BY

WILLIAM YARRELL, V.P.L.S., F.Z.S.

ABSQVE·DEO·NIHIL

FOURTH EDITION, IN FOUR VOLUMES.

ILLUSTRATED BY 564 WOOD-ENGRAVINGS.

VOL. III., REVISED AND ENLARGED

BY

HOWARD SAUNDERS, F.L.S., F.Z.S., Etc.

LONDON:
JOHN VAN VOORST, PATERNOSTER ROW.
MDCCCLXXXII–MDCCCLXXXIV.

QL690.G7Y2 1871 v.3

LONDON:
PRINTED BY WOODFALL AND KINDER,
MILFORD LANE, STRAND, W.C.

PREFACE

TO

VOLS. III.-IV. OF THE FOURTH EDITION.

THIS Fourth Edition of Yarrell's 'History of British Birds' was commenced by Professor Newton in 1871, and continued by him until May 1882, during which time the account of the *Accipitres*, *Passeres*, and *Picariæ* was completed. In June 1882 I undertook to finish the work—not willingly or with a light heart, but after considerable pressure and at much personal sacrifice. There were various difficulties which could be foreseen, and not the least among them was the conviction that my portion of the work must necessarily appear at a disadvantage when compared with the high standard of excellence attained by my predecessor. There was, moreover, a stipulation for the completion of the work by June 1885; and, allowing for a pre-arranged and necessary absence of six months from England, this left only two and a half years for writing the history of nearly 200 species. The accomplishment of the task within the allotted term may be allowed to extenuate some slips of the pen which are corrected in the Errata.

The Second and Third Editions were little more than reprints with additions, of the First, which appeared just forty-two years ago. During the interval our knowledge of many species has been vastly augmented, and the literature of the main subject has been more than doubled; an in-

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crease necessitating an amount of research, and the careful sifting of a mass of information, unknown to the original Author. The advantages undoubtedly counterbalance the drawbacks, but it must be confessed that the latter are considerable.

It is not within my province to consider the advisability of publishing under the honoured name of Yarrell a work which must necessarily be, to a great extent, rewritten; but my portion of the task, once accepted, has been performed to the best of my ability. Where practicable, the original phraseology has been followed, with due modifications; the opening words of the sentences have frequently been preserved, as ‘landmarks’ for possessors of former Editions; and extracts from the authors and correspondents quoted by Yarrell have been retained, subject to considerations of space, relevancy, and accuracy. This work of selection and adaptation has entailed severe labour, and, as a matter of fact, the original articles on the species added to the British list since the publication of the Third Edition, are those which have given the least trouble.

The many completed works on ornithology of which I have availed myself are mentioned from time to time in these volumes, and if the enumeration is re-commenced, it will be difficult to say where to stop. I can, however, acknowledge most of them collectively by expressing my obligations to that pre-eminent compilation, Mr. H. E. Dresser's ‘Birds of Europe,’ a work which has materially lightened my labours. Again, Mr. J. E. Harting kindly placed at my disposal the annotated copy of his useful ‘Handbook of British Birds,’ with several volumes of notes and extracts; and on all sides assistance has been freely proffered. The completion of the work within the appointed time is largely owing to the co-operation of numerous friends and correspondents who sent notes, rare books, and specimens, looked over proofs, and answered questions (sometimes by telegraph), with the utmost cheerfulness and promptitude. My thanks are especially due to Major H. W. Feilden, Messrs. E. Bidwell, F. Bond—the Nestor of British ornithology,—John Cordeaux, John Gatcombe, J. H. Gurney, jun., J. A. Harvie-Brown, H. Seebohm, and Cecil Smith; also to Lieut.-Col. E. A. Butler, Messrs. T. E. Buckley, A. Chapman, W. Eagle Clarke, T. Duckworth, E. Hargitt, F. S. Mitchell, A. G. More, T. H. Nelson, J. C. Mansel-Pleydell, Henry Stevenson, R. J. Ussher, Robert Warren, John Young, and others too numerous for mention.

The changes made in the systematic arrangement are believed to be the fewest consistent with the present state of our knowledge. It was obviously impossible that the Herons &c, should continue to split the Order *Limicolæ* by occupying their former place midway between the Plovers and the Curlews. It was equally clear that, according to modern views, the *Gaviæ* (Terns and Gulls) must follow the *Limicolæ,* to which, indeed, they are so closely related that it is doubtful whether they should not be comprised in the same Order. Opinions not being unanimous upon the relative positions of the Petrels, the Auks, the Divers, and the Grebes, I have subordinated my own views to the previous arrangement. The Herons (*Herodiones*) and the Cormorants (*Steganopodes*), had, of course, to be allocated in a proximity the scheme of which had already been disarranged by the commencement of the work with the *Accipitres.* Under these exceptional circumstances the last Order is necessarily that of the *Anseres;* nor is it altogether undesirable that it should be so, inasmuch as in the ossification of the sternum the normal members of that group show some resemblance to the *Ratitæ,* a sub-class which is generally, although not universally, allowed to be lower than the *Carinatæ.*

Assuming that, according to the original scheme of the work, a species is allowed to have a claim to be considered ‘British’ when a single authenticated example is proved to have been obtained in our islands without suspicion of artificial introduction, it would seem that the following species which have not been figured or described in detail, have some right to be enumerated in the British list; but certain

New World *Passeres* which cannot reasonably be supposed to have reached our shores without human agency need not be mentioned.

LANIUS MAJOR, *Pallas*. Pallas's Grey Shrike. To this species or sub-species—for it seems possible that it may interbreed with *Lanius excubitor*—belong the majority of the 'Great Grey' Shrikes obtained *in winter* in the British Islands, especially in Scotland. It appears to be a northern or north-eastern form, distributed, from Scandinavia eastward, over a large portion of Northern Europe and Asia, and distinguishable, when thorough-bred, by its white rump and by the absence of the white bases to the secondaries, while the white bases of the primaries are smaller than in *L. excubitor*. Roughly speaking, *L. major* has only one alar bar instead of two. Its range on migration is not yet clearly defined.

SAXICOLA STAPAZINA (*Vieillot*). The Black-throated Wheatear. An adult male was shot near Bury in Lancashire about the middle of May, 1878, and was exhibited at a meeting of the Zoological Society in the following November (P. Z. S. 1878, pp. 881 and 977). The species is common in Southern Europe and North Africa, and has straggled as far north as Heligoland.

SAXICOLA DESERTI (*Temminck*). The Desert Wheatear. A male in autumn plumage was killed near Alloa, Clackmannanshire, on the 26th of November, 1880, and, having been sent to Mr. J. J. Dalgleish, was forwarded by him for exhibition before the Zoological Society (P. Z. S. 1881, p. 453). The species inhabits the southern and eastern sides of the Mediterranean basin, and has twice been known to wander to Heligoland.

ACROCEPHALUS PALUSTRIS (*Bechstein*). The Marsh Warbler. It is impossible to doubt the authenticity of the examples obtained during the last ten years. Mr. Cecil Smith has shown (Zool. s.s. p. 4713) that it breeds near Taunton, and it is now known to do so annually (Zool. 1882, pp. 265, 306); it has also nested near Bath. I have examined several fresh-killed birds: also their nests and eggs; the two latter being very different from those of the Reed Warbler. The range of the two species is similar.

Sylvia nisoria (*Bechstein*). The Barred Warbler. An example shot many years ago in a garden near Queen's College, Cambridge, was exhibited by Professor Newton before the Zoological Society (P. Z. S. 1879, p. 219). One was killed in Yorkshire on the 28th August, and one in Norfolk on the 4th September, 1884 (P. Z. S. 1884, p. 477). The species breeds over the greater part of Europe up to the south of Sweden, and about as far west as 6° E. long.

Tichodroma muraria (*Linnæus*). The Wall Creeper. The occurrence of this remarkable species, so conspicuous from the band of crimson on the wing, was made known by Marsham, of Stratton-Strawless Hall, Norfolk, in a letter to Gilbert White, dated October 30th, 1792 (Zool. s.s. p. 4664). Mr. F. S. Mitchell has recorded another well-authenticated example shot in Lancashire on the 8th May, 1872 (Zool. s.s. p. 4839). Although an inhabitant of the mountainous portions of Central and Southern Europe, Asia, and North Africa, it is known to have straggled on several occasions to such apparently unsuitable localities as the centre of the commercial town of Nantes, on the Lower Loire, and I have examined several specimens obtained there.

Acanthyllis caudacuta (*Latham*). The Needle-tailed Swift. The two occurrences of this species in England are noticed in vol. ii. p. 371.

Caprimulgus ruficollis, *Temminck*. The Red-necked Nightjar. For remarks on the occurrence of this southern species in Northumberland, see vol. ii. p. 386.

Caprimulgus ægyptius (*Licht*). The Isabelline Nightjar. On the 23rd of June, 1883, an undoubted example of this south-eastern species was shot by the gamekeeper of Mr. J. Whitaker, of Rainworth Lodge, near Mansfield, Nottinghamshire, in whose collection it now is (Zool. 1883, p. 374). The species is a native of North-eastern Africa and Western Asia; but this makes its sixth occurrence in Europe; one of them being in Heligoland.

Ægialitis vocifera (*Linnæus*). The Killdeer Plover.

In noticing an undoubted specimen of this American species said to have been killed in Hampshire (vol. iii. p. 160), I did not then consider the evidence quite sufficient to justify admission to the British list. On the 15th of January, 1885, Mr. Jenkinson shot and sent to Mr. Vingoe for preservation (Zool. 1885, p. 113), a specimen which I have since examined.

Totanus solitarius (*Wilson*). The Solitary Sandpiper. In my note on this species (vol. iii. p. 468), I hesitated to include the species on the reported occurrence on the Scilly Islands of an example which had not been authenticated by some expert. Since then, a bird of this species has been shot near Marazion, Cornwall, and has been identified by competent authorities (Zool. 1885, p. 113).

Colymbus adamsi, *Gray*. The Yellow-billed Northern Diver. Since writing the remarks on this recognizable species (vol. iv. p. 100), Mr. J. H. Gurney has kindly sent me a photograph of the head of the immature bird shot on the Suffolk coast in 1852, and the form of the bill shows clearly that it is an example of *Colymbus adamsi*. Mr. H. Seebohm has identified a second specimen, in the Newcastle Museum, shot on the coast of Northumberland, and has given his views on the geographical distribution of the species in 'The Zoologist,' 1885, p. 144.

I am only aware of three errors of sufficient importance for notice beyond the inevitable Errata. The first is to be found in vol. iii. p. 678, line 26, in the description of the young of the Arctic Skua, where, by an inadvertence, the words "the shafts of the two outer feathers white, the others dusky"; have slipped in; they really refer to the next species, the Long-tailed Skua.

In the article on the Puffin, vol. iv. p. 95, line 2, by a slip of the pen consequent upon the transposition of the words 'summer' and 'winter' in the revise, the very opposite of what is meant is stated. It is obvious that the bill of the Puffin is *larger* in summer than in winter, and that word should be substituted for "smaller."

Lastly, in the list of Norfolk heronries (vol. iv. p. 166) there is a double error in the statement that there is a colony of Herons at Spixworth, and that their nests are in Portugal laurels. There is no heronry at Spixworth, and the birds which bred in the laurels were Rooks; but although the information has proved to be incorrect, it came from an informant whose name is so well known in connection with Norfolk that there was no primary reason to doubt it. To those who are only acquainted with the Heron as nesting on tall trees, my credulity may appear absurd, but ornithologists of wider experience who have seen, on the one hand, laurels strong enough to sustain the nest of an Eagle, and have found, on the other, Herons nesting on mere bushes, will admit that there was no inherent improbability in the statement.

HOWARD SAUNDERS.

7, RADNOR PLACE, HYDE PARK, W.,
30th April, 1885.

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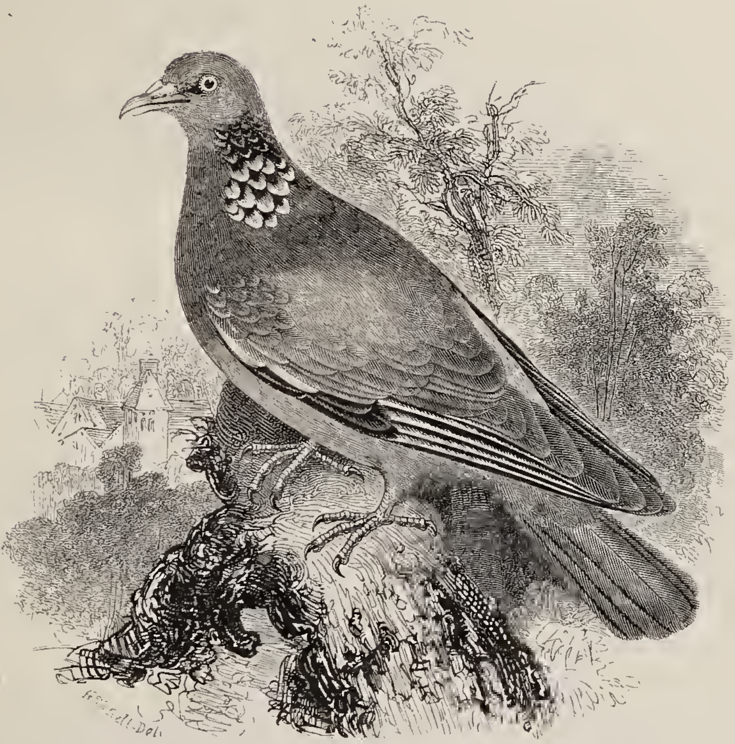
86,	28,	*dele* Northern.
124,	6,	*for* Oxfordshire *read* Cambridgeshire.
143,	19,	for *porzana* read *maruetta.*
200,	22,	*for* at Hawold. Across the Humber, it would appear, *read* at Hawold, across the Humber. It would appear, &c.
241,	28,	*for* St. Michael's-in-Wyse *read* St. Michael's-on-Wyre.
297,	5,	*for* Shrenck *read* Schrenck.
310,	1,	*insert* LIMICOLÆ.
331,	19,	*for* (1688) *read* (1678).
364,	13,	*for* Pryor *read* Pryer.
399,	31,	*for* Lancashirc *read* Lancashire.
405,	9,	*for* stragger *read* straggler.
415,	31,	*for* Lyons *read* Lyon.
453,	20,	*for* is *read* are.
489,	4,	*dele* recurved.
513,	30,	*dele* late.
598,	35,	*dele* the.
609,	2,	*for* ICHTYAETUS *read* ICHTHYAETUS.
663,	9,	*for* pray *read* prey.
678,	27,	*for* of the others dusky *read* of the others also mainly white, but somewhat dusky towards the tips.

BRITISH BIRDS.

COLUMBÆ. *COLUMBIDÆ.*



COLUMBA PALUMBUS, Linnæus *.

THE RING DOVE OR WOOD PIGEON.

Columba palumbus.

COLUMBA, *Linnæus*†.—Bill moderate, straight at the base, compressed, the point deflected. Base of the upper mandible covered with a soft skin, in which the nostrils are pierced. Tarsi short, anteriorly scutellate, posteriorly scurfy; feet, three toes in front, entirely divided, one toe behind. Wings, long, broad, rather pointed; the second quill-feather longest. Tail of twelve feathers nearly even.

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* Syst. Nat. Ed. 12, i. p. 282 (1766).

† *Tom. cit.* p. 279.

The Ring Dove, so called from the white feathers which form a partial ring round its neck, and equally well known in many parts of England as the Wood Pigeon, and in the North as the Queest or the Cushat, is the largest member of the genus found in Europe. It is an abundant and generally distributed species throughout the British Islands; its numbers having increased of late years to an extent which has caused grave anxiety to the farmers. This is mainly owing to the altered conditions of cultivation; the large proportion of land now under turnips and other green crops supplying food which was formerly wanting during the inclement months; whilst the numerous small plantations which have lately sprung up afford just the kind of shelter that the Ring Dove requires:—open enough to preclude the approach of an unseen adversary,—close enough for protection from the weather and for breeding purposes. Add to this, that its natural foes have been, as far as possible, destroyed by game-preservers and their keepers, and it can hardly be a matter of surprise that under such favourable circumstances the species is now far more numerically abundant than in former years. In addition to those bred in this country, large flocks make their appearance in winter and autumn, crossing the North Sea from the continent by an E. to W. flight.

The note of this Dove—a deep *coo roo, cōō cōō*—may be frequently heard in the months of March and April in the neighbourhood of woods and plantations, particularly those of firs, in which it delights to build. The nest usually consists of merely a few sticks laid across, at times so thinly that the eggs can be distinguished from below; but it is often more substantial, and occasionally the old nest of some other bird, or a squirrel's drey, serves as a foundation. Although generally at some distance from the ground, it is also to be found in hedgerows of old hawthorn; and Mr. R. Gray states that near Arbroath, in Forfarshire, nests have been observed in tall whin bushes.* Not unfrequently it chooses a site for its nest in gardens in close proximity to habitations, and sometimes even in the matted ivy covering their walls. The first clutch of eggs is generally laid early in April, and the second early in June; even a third laying is not unfrequent, for birds just hatched have been found at least as late as October 18th, so that even a fourth brood is possible, although the young probably succumb to the approach of winter.* The eggs, whose complement, as with all true Pigeons, is invariably two in number, are oval in form and of a pure glossy white, measuring 1·6 by 1·2; they are deposited at an interval of two or three days, and incubation lasts from sixteen to eighteen. The male takes a share in this task, and, as a rule, sits on the eggs during the greater portion of the day. The young, when hatched, are helpless and blind, continuing so until about the ninth day, and they remain in the nest until they are quite able to fly. They are nourished by food supplied from the crops of the parent birds, who, opening their bills so that the mandibles of the young enter the pharynx, regurgitate the pulpy and half-digested, curd-like contents of the crop, shewing that "pigeon's milk" is not the absolute and unfounded fable it was once supposed to be. Mr. R. Gray (*op. cit.*) states that he has several times reared young birds from eggs placed under a common Pigeon, and in these cases they maintained a quiet habit, mixing freely and tamely with their domestic neighbours; but in only one instance did he know of a Ring Dove breeding in confinement. This was a female, taken young, which received her liberty when fully grown, but, instead of flying back to the woods, she paired with a bachelor domestic Pigeon in a dovecote in the town of Cumnock. The pair had eggs three times, although only one young bird was reared; it was larger than the domestic Pigeon, and resembled the female parent in its general markings. As mentioned in former Editions of this work, the late Mr. Thomas Allis, of

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* Birds of the West of Scotland, p. 218.

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* Mr. Frank Norgate (Zoologist, 1878, p. 106) states that on February 1st he shot four young Ring Doves in Norfolk, one of which retained the long downy filaments on the upper wing-coverts.

York, and the late Earl of Derby, at Knowsley, were successful in inducing this species to breed in confinement.

When reared from the nest, the birds frequently become much attached to their owner, and even when given their liberty they have been known to sweep down and recognize him with demonstrations of pleasure after an absence of nearly twelve months, although always shy to strangers. Up to six years ago, a pair used to breed in the Green Park, and a few still do so in Kensington Gardens; but the tameness of this species, under certain conditions, can nowhere be witnessed better than in Paris, where, in the gardens of the Luxembourg, the Tuileries, the Parc Monceau, and other public promenades, the Ring Doves may be seen taking food from, and even perching upon the arms and shoulders of those who habitually feed them.

The Ring Dove is strictly monogamous, and during the breeding season is generally seen in pairs: or singly, when taking turns at the task of incubation. In the autumn, however, it becomes gregarious, and in winter the flocks sometimes consist of many hundreds, and even thousands. During the summer these birds feed on green corn, young clover (the leaves of which they devour by the bushel), grain of all sorts, peas, &c. Mr. R. Gray has shot numbers with their crops perfectly distended with gooseberries; and from the crop of one killed in Forfarshire 1,020 grains of corn were counted. The crops of four of these birds sent by Lord Haddington at different times yielded the following results: the first contained 144 field peas and seven large beans; the second 231 beech nuts; the third 813 grains of barley; and the fourth 874 grains of oats, and fifty-five of barley. Such damage may be better estimated from the fact that the bird is known to feed three times daily; and in a grain-producing district, like East Lothian, where from 15,000 to 29,000 Pigeons have been destroyed within twelve months, without effecting any apparent decrease in their numbers, the loss to agriculturists must be enormous. It appears doubtful whether the bill of the Wood Pigeon is strong enough to break into the bulbs of turnips, but when that work has been commenced by Rooks, Partridges or hares, the Pigeons continue to hollow them out very successfully; whilst there can be no doubt that they eat the leaves, and thus check the growth of the turnip in its earlier stages.* They are fond of bathing in and drinking fresh water, and Mr. Cordeaux states that in summer, but at no other time, this species resorts daily to the marsh drains of the Humber district to which the tide has access for the purpose of drinking the brackish water; Mr. H. Blake-Knox has also observed it eating sea-weed on the rocks left bare by the ebb. It is partial to the seeds of the common buttercup (*Ranunculus acris*), as well as the berries of the holly and the yew; and when it resorts to the stubbles after harvest to consume the scattered grain, it also devours an immense number of the seeds of various weeds, thereby rendering services to the farmer which in some measure counterbalance the depredations of the rest of the year.

In England it has long been known as an abundant and generally distributed species, whose numbers have shewn a decided tendency to increase; but in Scotland the spread of high cultivation has assisted its progress in a remarkable manner. In East Lothian, where less than a century ago the species was quite unknown, the records of the Agricultural Society of that district shew that no less than 130,440 birds were destroyed between 1863–1870 without materially affecting its numbers. The eastern districts of Scotland frequently suffer from the arrival of immense flocks from the continent, a large proportion taking up their abode in the country, but on the western side although on the increase it is less numerous, and although ranging up to Sutherlandshire, it is merely a straggler to the westward of the Inner Hebrides. Even to the Orkneys and the storm-swept, treeless Shetlands, its visits are becoming more frequent, and it has wandered several times as far as the still bleaker Færoes. In Ireland it is generally distributed and on the increase. On the continent of Europe it ranges in summer throughout suitable districts up to about

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* R. Gray, *op. cit.*

65° N. lat., and has even straggled up to 66° 10′ N. : in the central portion it is generally resident, but in the southern countries bordering the Mediterranean it is more especially abundant on migration, although it breeds in some numbers down to Morocco, and also in Algeria. Its western limit is the group of the Azores, where according to Mr. Godman it appears to be confined to the central and eastern islands. To the eastward its range cannot be traced with certainty much beyond the Ural, in the north, or beyond the Tigris in the south: in Asia Minor, Palestine, and as far as Bagdad this species is certainly abundant, but in Turkestan, and to the east of the line of the Persian Gulf, it appears to be replaced by an allied species, *C. casiotis* (Bp.), with neck-patches of a buff colour instead of pure white.

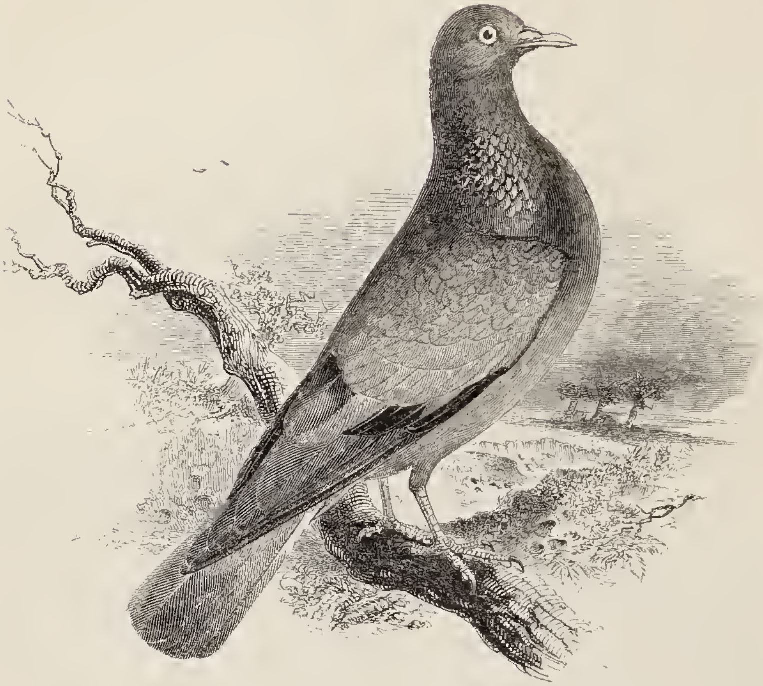
In the adult male the bill is yellow towards the tip and orange-red at the base; the soft parts about the nostrils almost white; irides straw-yellow; head and upper part of the neck bluish-grey, the feathers on the sides of the neck glossed with violet and purple, the lower ones being tipped with white, forming parts of four or five oblique rings; back, scapulars, both sets of wing-coverts and tertials a shade darker, and browner than the head; the first four or five feathers of both sets of wing-coverts white, or partially white, which, when the wing is closed, produces only a white line down the edge of the wing, but when they are spread open these feathers then form a conspicuous white patch, which is visible at a great distance; the primary quill-feathers are lead-grey with narrow white margins and black shafts; lower back, rump, and upper tail-coverts bluish-grey; tail-feathers twelve; the pair in the centre of two colours, the basal two-thirds bluish-grey, the ends dark lead-grey; the other ten feathers of three shades of grey, the middle part being the lightest in colour; chin bluish-grey; neck and breast vinous-purple; belly, vent, and under tail-coverts ash-grey; under surface of tail-feathers pearl-grey in the middle, lead-grey at both ends; tarsi and feet red, claws brown.

The whole length is seventeen inches. From the carpal joint to the end of the wing ten inches; the second quill-feather being the longest in the wing, from which the others decrease gradually.

The female is a little smaller than the male, and her colours are somewhat duller.

Young birds are fully fledged by the end of the third week, and are then of a lead-grey, with a very conspicuous wing-bar, on the upper parts; the breast being vinous-brown, with numerous yellowish filaments still adhering to the tips of the feathers. The bill, which is tumid and quite out of proportion to the size of the bird, is even more flattened out, and more distinctly notched on the edges of the under mandible, than in most domestic Pigeons. The colour of both bill and feet at this time is a livid grey: the former with a white tip crossed by a narrow black bar. Before their first moult they have no white on the sides of the neck, and the general colour of the plumage is less pure and glossy, but they assume the adult plumage the first year. Varieties more or less spotted over the body with white, and even perfect albinos, are sometimes met with: a remarkable example of the latter is in the collection of Mr. John Marshall, of Belmont, Taunton.

COLUMBÆ. *COLUMBIDÆ.*



COLUMBA ŒNAS, Linnæus [*].

THE STOCK DOVE.

Columba œnas.

BY Montagu, Bewick, Fleming, and some of the earlier authors, the Stock Dove was confounded with the Rock Dove, from which, however, it is now well known to be perfectly distinct. Whilst this confusion lasted, the name was supposed to be owing to its being considered to be the origin of our domestic stock; but the appellation is now generally attributed to its habit of nesting in the stocks of trees, particularly such as have been headed down, and have become rugged and bushy at the top. Its German name *Hohltaube*, or Hole-Dove, is similarly owing to the predilection for hollow trees. In fact, the peculiar nesting habits of this Dove are amongst its principal characteristics. In wooded countries it generally selects elms, oaks, and willows—especially pollards—and the hollows of beeches: frequently making no nest but depositing its eggs upon the rotten wood which has accumulated; it also makes use of old Crows' and Magpies' nests and squirrels' dreys, the matted boughs of the Scotch fir, and ivy-grown trees and ruins. In such situations as the foregoing its eggs may be found even so near to London as Richmond, Windsor, and Cashiobury Parks, and generally throughout the wooded southern counties of England. But in the open districts—Norfolk and Suffolk—it occupies the deserted rabbit-burrows upon warrens; placing its eggs about a yard from the entrance, generally upon the bare sand, sometimes using a small quantity of dried roots, &c., barely sufficient to keep the eggs from the ground. Besides such situations on the heath, it nestles under thick furze bushes which are impervious to rain in consequence of the sheep and rabbits eating off the young and tender shoots as they grow; the birds always preferring those bushes that have a small opening made by the rabbits near the ground.* The young, which are ready for the table early in June, are stated by Professor Newton to be a source of considerable profit to the warreners, whose perquisites they are; and in consequence almost every warrener keeps a "dowe-dawg," *i.e.*, a dog trained to discover the burrows in which the Doves breed.† They also breed in the rabbit-burrows of the Lincolnshire coast and of Walney Island, Lancashire. But the nesting peculiarities of the Stock Dove do not end here. Mr. Harting (Zoologist, 1867, p. 758) relates how a pair bred for several seasons on a crossbeam in the old spire of Kingsbury Church, and the young birds, which he took and reared, were seen by many ornithologists. By the same plan Mr. Harting also proved that the Pigeons which frequented the Dorsetshire cliffs about Lulworth Cove were not, as had been generally supposed, Rock Doves, but Stock Doves. There can, indeed, be little doubt that in several localities a similar error has prevailed; and this is certainly the case in the Undercliff district of the Isle of Wight, where the Editor can state from personal knowledge that the Stock Dove is the species which nests in abundance in the holes of the wooded crags near Ventnor. It also nests in the sea cliffs of Flamborough, where, however, the Rock Dove is also found. Under these circumstances it is not so strange that this species should have been confounded with the Rock Dove, for it appears to be about the same size when on the wing, and although it has not a white rump, yet in its light and rapid flight it far more closely resembles the Rock than its larger and heavier congener the Ring Dove.

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[*] *Columba œnas,* Linnæus, Syst. Nat. Ed. 12 (1766), i. p. 279, in part, the description being somewhat confused with that of the Domestic Pigeon, although in the *Fauna Suecica*, p. 75 (1761), the author had accurately described the present species. As the name has been long and almost universally applied to this bird, there seems to be no adequate reason for rejecting it. *Œnas* from *οἶνος, vinum.*

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* J. D. Salmon, Loudon's Mag. Nat. H. ix. p. 520.

† Stevenson, Birds of Norfolk, i. p. 356.

The eggs, two in number, are oval and white, of a somewhat more creamy tint than those of *C. palumbus*, and measure about 1·5 in length by 1·1 in breadth. They are usually laid about the commencement or middle of April, but Mr. C. Mathew Prior states that fledged young may often be found by the third week of that month, and he also found two fresh eggs in a hollow ash-tree on 2nd October, 1875.* Incubation lasts seventeen or eighteen days. In its habits this species resembles the Ring Dove, but its note is far less distinct and less prolonged, and may not inaptly be described as grunting. Its food is naturally somewhat similar; but the late Mr. Rodd remarked that in the case of a bird of each species shot at the same discharge, whereas the crop of the Ring Dove contained a great pulp of clover leaves, turnip-tops and bulbs, that of the Stock Dove contained not a leaf of clover, but an egg-full of charlock seeds, some barley and several weed seeds.

Columba œnas is, in fact, a south-eastern species which is gradually extending its range northwards and westwards. It has occurred in the Scilly Islands, and sometimes visits

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* Zoologist, 1879, p. 338.

Cornwall in large flocks in winter, passing upwards into Wales, in some counties of which it certainly breeds—among the rocks of Merthyr Tydfil, for example—although nowhere so numerous as the Ring Dove. In Devonshire it is probably increasing, and Mr. Cecil Smith says that it is twenty-fold more numerous in Somersetshire now than in 1869. Although of somewhat local distribution, it occurs throughout the southern, midland, and eastern counties including Lincolnshire, where, Mr. Cordeaux says, it is distinctly on the increase; and, although scarcer to the north of the Humber, it breeds regularly in the rocks and rabbit-holes of the cliffs in the Hambleton Hills. It has already become common in the neighbourhood of Castle Eden Dene, Durham, and has even pushed its breeding range as far as Northumberland and Berwickshire. Its occurrence in Stirlingshire and southern Perthshire has been recorded by Mr. Dalgleish (Ibis, 1878, p. 382), and Mr. R. Gray says that there is evidence that it has straggled as far as Orkney. The instances already cited in which this species has been mistaken for the Rock Dove on the strength of its selecting holes in cliffs for its nesting-place, lead to the supposition that similar and as yet undiscovered errors may have been made elsewhere. In Ireland its occurrence was first recorded by Lord Clermont, who obtained one in October, 1875,* and subsequently obtained another, and observed the birds nesting in a crevice of the rock on the hill-side on the borders of Armagh and Louth—a locality which they had been known to frequent for some years, but until then it had not been decided whether they were this species or the Rock Dove. It has also been obtained, and has bred, in county Down.†

On the continent it has once been known to straggle beyond the arctic circle, but its usual northern range nearly coincides with that where the oak grows (about 60° to 61° N. lat.): it being plentiful in south-eastern Norway, Sweden, Germany, and suitable localities in Russia as far as the Ural, migrating southward in winter. In some of the large forests of France it is abundant, and resident, but in the countries bordering the Mediterranean it principally occurs on migration. In Morocco, however, Colonel Irby observed it during the breeding-season near Tangier, and also as far south as Larache; and it certainly visits and probably breeds in Algeria; but its occurrence as far as Egypt is at present open to doubt. In Palestine and Asia Minor it is also found, reaching as far as the Tigris, but beyond the Persian plateau, and eastward of that line and of Turkestan, its place is taken by a very interesting and distinct species, *C. eversmanni.* The latter, whilst resembling *C. œnas* in the broken and undefined character of the bars on the wing, differs from it in having the basal half of the bill black, the crown of the head vinous, and a pale grey band across the rump, in which latter characteristic it approaches the Rock Dove, *C. livia.*

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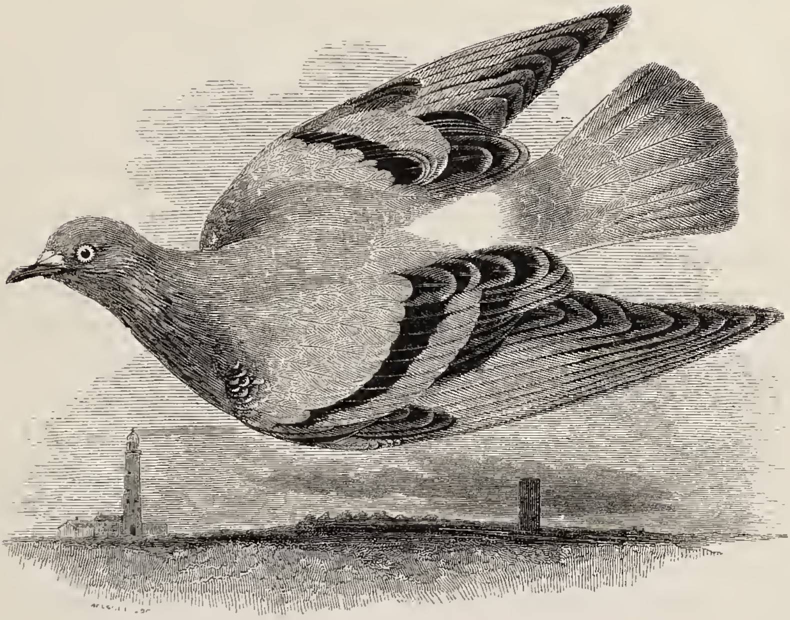
* Zoologist, 1876, p. 4798.

† *Op. cit.*, 1877, p. 383.

The beak is horn-white at the tip: the basal portion red; irides brown; head, neck, back, scapulars, and wing-coverts bluish-grey; primary quill-feathers brownish-grey, the external margin lighter; secondaries pearl-grey at the base of the outer web, lead-grey at the ends; tertials bluish-grey, the last three with a dark lead-grey spot on the outer web, and a similar spot on some of the wing-coverts above, without, however, forming a regular band in any position of the wing; rump and upper tail-coverts light bluish-grey; tail of twelve feathers: the basal two-thirds bluish-grey, inclining to white on the outer web of the exterior ones, followed by a band of lighter grey: the ends lead-grey; chin bluish-grey; sides of the neck glossy green, with purple reflections; breast vinous; belly, flanks, vent, under wing, and under tail-coverts pale bluish-grey; tarsi and feet red. The whole length of the male is about thirteen and a half inches. From the carpal joint to the end of wing nearly nine inches; the second quill-feather the longest, and the third nearly equal to it. The female is somewhat smaller, and her colours are less brilliant.

Young birds before their first moult have no shining metallic feathers in the neck, nor are the spots on the tertials and wing-coverts apparent.



Columba livia, Gmelin.[*]

THE ROCK DOVE.

Columba livia.

The Rock Dove, as its name implies, is a species which, in its natural and wild state, inhabits rocks whose cavities afford it shelter during the greater part of the year. Such localities are in these islands principally confined to the sea-coast, and consequently the records of the Rock Dove being found breeding inland are, in many cases, open to the suspicion that either the Stock Dove has been mistaken for it, or that the individuals in question are really domestic birds which have abandoned the dovecote. It has already been pointed out that even on the sea-coast it is frequently the Stock Dove which has been proved to inhabit the cliffs, as in Dorsetshire, the Isle of Wight, and Yorkshire; and it seems to the Editor that the only localities in which true wild birds can be with certainty indicated as breeding are those in which the rocks offer deep caves, or at least cavities and fissures. Cliffs of this description are comparatively rare on the coast of England, and it is in the north and west, and along the rugged, sea-scooped shores of Scotland, Ireland, and their islands, that the true home of the really wild Rock Dove must be sought. There can be no doubt that this, with two or three closely-allied sub-species or geographical races, is the stock whence our domestic Pigeons have sprung, and a very large proportion of the latter have varied so little from the parent stem, that it is often extremely difficult to distinguish between true-bred wild birds and those which have been at least partially domesticated. Both the wild stock, and the varieties produced from it, have been exhaustively treated by the late Charles Darwin,* and to his masterly arrangement of facts the present abstract is much indebted.

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[*] *Columba livia*, Gmelin, Syst. Nat. i. p. 769 (1788), ex Brisson. There is some uncertainty about Gmelin's description, but the name has been universally adopted for this species.

In the eastern and southern districts of England, localities suited to its habits are few and far between, and even in some places which apparently offer the requisite conditions, such as Guernsey, Sark and the smaller Channel Islands, the Rock Dove seems to be little known; in Devonshire it is also rare and very local, and only a few frequent the cliffs of Cornwall. It can be traced along the coast of Wales to the Isle of Man, to the northwards of which its numbers increase until almost every district up to the confines of the Hebrides, the Orkneys, and the Shetlands, has its "Ua' Caloman," or "doo-cave." In Ireland also, especially on the rugged, wave-worn crags of the western side, it is abundant. On the eastern side of England the breeding-places of this species are necessarily few, and even in Yorkshire and Northumberland the birds found in them are open to the suspicion of not being pure wild birds; but along the coast of Scotland, from the Bass Rock upwards, the wild Rock

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* Variation of Plants and Animals under Domestication, i. pp. 137–235, ed. 1875.

Dove is generally distributed. In many localities either wild birds, or, more probably, those which have become feral, are chequered with black on the wing-coverts and back, and to such a variety the late Mr. Blyth once doubtfully gave the name of *C. affinis*.

In the Færoes* it is abundant, but in Scandinavia the wild bird is scarce and very local; whilst in the rest of northern and central Europe it is decidedly uncommon, except in a feral state, until mountainous regions are reached, when, as in the Pyrenees, it is again met with. In the Canaries it is common, and Mr. Godman states that it is abundant in the Azores, most of his specimens being so dark in plumage that the band on the wings is no longer visible; dark forms are also found in Madeira, accompanied by so much variability as to raise a strong suspicion that they are domestic Pigeons which have become feral. The same suspicion attaches to *C. gymnocyclus*, G. R. Gray, from Senegambia, and also to the birds now found in a wild state in the island of St. Helena.

On the coasts of the countries on both sides of the Mediterranean, and on the islands, it is generally distributed; and in the mountain ranges of Spain, especially in the neighbourhood of the Sierra Nevada, the Editor has seen immense flocks pouring forth from the deep cavernous gorges on the way to their feeding-grounds. He estimated that within a short time fully 7,000 birds passed in his immediate vicinity, each flock being led by a pied and doubtless half-bred bird, of which description there were generally a few individuals in every band. It must be remembered that vast numbers of semi-domestic Pigeons exist in Spain, and that there are well-known laws for their protection, such as the prohibition to shoot at them within a certain distance of the dovecote, or when obviously returning to it. In Italy Bonaparte considered that he had discovered a new species, to which he gave the name of *C. turricola*; but this is now considered a mere variety or half-breed.

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* A bird in which the black bars on the wing were replaced by a few spots, was named by Brehm *C. amaliæ*.

Many of the birds on both sides of the Mediterranean have a distinctly white rump, although even in the west, as in Spain, there is a tendency in the white to become less pure than in northern examples, and the band is often narrower. Proceeding eastward, there is a gradual increase in the number of birds which have less white in the rump, until in the Jordan valley, according to Canon Tristram, only the grey-rumped form, to which Bonaparte gave the name of *C. schimperi,* is found; although in the mountains on either side the true *C. livia* is abundant. In Egypt, Dr. Leith Adams states that it is not easy to define the limits of wild and domestic Pigeons, all the denizens of the dovecotes preserving the leading characteristics of the two black bars on the wings and the single black bar on the tail, with the white on the edges of the outer tail-feathers: most of the domestic birds, however, had the grey rump of *C. schimperi.* True *C. livia* appears, however, to go as far as Mesopotamia, and has also been obtained in Sindh and Cashmere, but in Gilgit, Dr. Scully found both the white-rumped and the grey-rumped forms; even the latter, however, being always lighter than the extreme form, *C. intermedia,* Strickland, which inhabits Southern India and Ceylon, and which has the rump as dark as, or darker than, the back. In Turkestan, Central Asia, Tibet and China, is found a more distinct form, *C. rupestris,* Pallas, which has a white subterminal band on the tail-feathers. "There seems," says Darwin, "to be some relation between the croup being blue or white, and the temperature of the country inhabited by both wild and dovecot pigeons; for nearly all the dovecot pigeons in the northern parts of Europe have a white croup like that of the wild European rock pigeon; and nearly all the dovecot pigeons of India have a blue croup like that of the wild *C. intermedia* of India."

In Britain the Rock Pigeon sometimes begins breeding as early as March: birds recently hatched having been noticed on 2nd April,* and young, and even unhatched eggs, are found in September; so that at least two broods are reared in the year. Deep caverns, moist with the spray from the thundering surge, are its favourite resorts, and on entering one of these in a boat, numbers will dart forth from its dark recesses, and, as the eye becomes accustomed to the twilight, the grey plumage of those which have remained on the more distant ledges, may be discerned against the dark background of the rocks. The nest is slight, constructed of bents, heather, dried grasses or sea-weed, and the eggs are, as usual, two in number, pure white, of a short oval shape, rather pointed at one end, measuring 1·5 by 1·15.

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* R. Gray, Birds of the West of Scotland, p. 222.

Like its congeners, this species devours considerable quantities of grain; making amends to some extent by eating the roots of the couch-grass (*Triticum repens*), and the seeds of various troublesome weeds when corn is not procurable. Montagu ascertained that it eats considerable quantities of *Helix virgata*, and Macgillivray says it picks up several species of shell-snails, especially *Helix ericctorum* and *Bulimus acutus*. It drinks frequently, and in Egypt, in places where the banks of the Nile are so steep that the birds cannot alight on the shore to drink, both Mr. R. S. Skirving and Mr. E. C. Taylor have observed whole flocks settle on the water like Gulls, and drink whilst they floated down stream. The same habit has been observed in tame pigeons at Cologne when the shore-ice in the Rhine prevented approach to the water. It is migratory in the north to a limited extent, impelled by the necessity of seeking food, but generally it is a resident species. One marked characteristic is its strong objection to settling upon trees—a peculiarity shared by its domesticated relatives.

The adult has the beak reddish-brown; irides pale orange; head and neck bluish-grey, the sides of the latter shining with green and purple reflections; shoulders, upper part of the back and both sets of wing-coverts french-grey; all the greater coverts with a black mark forming a conspicuous black band; primary and secondary quill-feathers bluish-grey, darker on the outer webs; tertials pale grey with a broad band of black separated from the above-mentioned band by the light-coloured line of the great wing-coverts; lower back and rump white; upper tail-coverts slate-grey; tail-feathers twelve in number, a shade lighter, with a broad terminal dark leaden band, sometimes paler at the extreme tip; chin bluish-grey; throat purple and green; breast, and all the under surface of the body grey; under wing-coverts and axillaries white; under tail-coverts slate-grey; tarsi and feet red; claws dark brown. The total length of the male is fourteen inches; from the carpal joint to the end of the wing nine inches; the first quill-feather a little shorter than the second which is the longest. The females are smaller than the males, and their colours, especially on the neck and shoulders, are less brilliant.

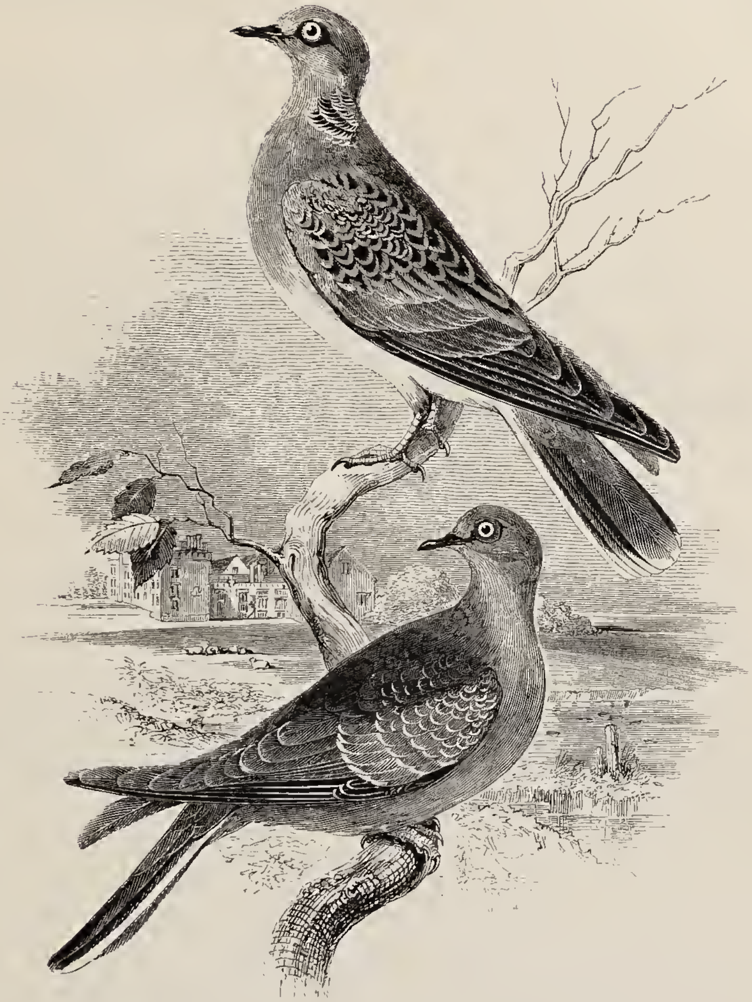
The young, which are at first covered with loose yellow down, are, when fledged, of a duller colour, but otherwise similar to the old birds, with the exception of the metallic tints on the neck: even then their white rump easily distinguishes them from the young of the Stock Dove, and at the first moult they acquire their full plumage.

It hardly comes within the scope of this work to enter into details respecting the domesticated varieties sprung from this stock. Many of them, as Darwin has remarked, would, if found wild, have been ranked as distinct species, whilst not a few present even structural peculiarities, which would certainly have led ornithologists to place them in different genera. A peculiar interest, however, attaches itself to the Homing Pigeon, one of the least removed from the original stock, and often erroneously called the Carrier. The practice of using Pigeons for the conveyance of messages is of great antiquity, and Dr. Leith Adams (Ibis, 1864, p. 26) states that on one of the walls of the Temple of Medinet Haboo is a sculpture of the time of Rameses III., B.C. 1297, representing that monarch as having just assumed the crown of Upper and Lower Egypt, whilst a priest in the regal procession is sending out four Pigeons to convey the news abroad, shewing that even then they were used for this purpose. The following observations respecting the latest performances of the Homing Pigeon will, therefore, be read with interest; especially as they proceed from that great authority, Mr. W. B. Tegetmeier, the originator of the recent utilization of this variety by the Trinity House:—

"The variation of the Rock Dove in a state of domestication is capable of being carried out to a very remarkable degree by careful selection of brood-stock. Not only can the colours of the original species be varied, or even their arrangement reversed, but strange modifications can be perpetuated; such as the production of frills or hoods, and an increase in the number of the tail-feathers, varying from the normal twelve up to forty. Structural alterations are also effected, as in the rounded head of the short-faced Tumbler, or the elongated beak of the fancy Carrier. The latter breed is frequently confounded with the Homing or *Voyageur* Pigeon, which is only altered from the wild original by a larger cerebral development, greater size and muscular power, and an extraordinary increase in the breadth of the primary flight-feathers of the wing.

"Careful training, and breeding from the best specimens, have greatly increased the faculty that these Homing birds have for returning to their lofts from long distances. The system of beginning with a few miles, and increasing until fifty and even a hundred miles are taken at a stage, causes the loss of the weaker and the less intelligent birds, and the perpetuation of the best of the race. The result has been remarkable. Some thirty years since it was rarely the case that in the Belgian pigeon-races of 300 miles, even a few birds returned home on the day of their liberation, but now it is unusual, in good weather, for any of the prizes in a 500 miles race, not to be won on the very same day that the birds are flown. Thus in the great Belgian national race of the present year (1882), which took place from Morcenx, south of Bordeaux, to Brussels, a distance of 510 miles, 1,674 birds were liberated at 4.12 A.M., the wind being S.W., and the weather clear, the first bird reached home at 4.37 P.M.; his speed having been about 1,300 yards per minute. One hundred and fifty-five birds were back the same day, and the match was over early next day, when the winner of the two hundred and eighth, or last prize, was sent to the club for identification. The return of these birds is not unfrequently spoken of as a peculiar manifestation of instinct, but it depends upon observation and power of flight; and the best bred birds will be lost if they are taken untrained 100 miles from home. In this island, where the cloudier state of the atmosphere interferes greatly with the view of the birds, distances equal to those on the Continent have not been accomplished, but races are regularly organized, and this year several have been successfully flown from Cherbourg, Arras, St. Quentin, &c., to all parts of England.

"The utilization of Homing pigeons in the conveyance of letters microscopically reduced, from Tours to Paris during the siege of 1870–71, is well known; and birds are now reared by both Germans and French in all those fortresses which are liable to be beleaguered in time of war. In England the Trinity House have utilized them in carrying messages from the light-ships, and they are also being employed by the Government on some of the Indian stations."



TURTUR COMMUNIS, Selby.[*]

THE TURTLE DOVE.

Columba turtur.

TURTUR, *Selby*[†].—Bill rather slender, the tip of the upper mandible gently deflected, that of the lower scarcely exhibiting the appearance of an angle: base of the upper mandible covered with two soft, tumid, bare substances covering the nostrils. Tarsi rather shorter than the middle toe; inner toe longer than the outer. Tail, of twelve feathers, rather long and considerably rounded or graduated. Wings rather long and pointed, the first quill a little shorter than the second, which is the longest.

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[*] Naturalist's Library, Ornithology, vol. v. pp. 153 and 171 (1835).

[†] *Tom. cit.* p. 169.

The Turtle Dove is only a summer-visitant to the British Islands, arriving in the southern districts about the end of April or beginning of May, according to the nature of the season. Owing to the great increase of conditions suitable to their habits, these birds are both more numerous and far more widely distributed than in former years. They frequent woods, fir plantations, and high thick hedges dividing arable land, and in such situations they make a flat nest of a few twigs, frequently so slight as to seem incapable of retaining the eggs. Its elevation varies considerably: sometimes it is not more than four feet from the ground; the average distance is about twelve; and it has been found at least forty feet up, on the top of a pine in a shrubbery. The eggs, deposited from the middle of May onwards, are, as usual, two in number, of a glossy creamy white, rather pointed at one end, and measure about 1·2 by ·9 in. The parent birds take turns in the task of incubation, which lasts a fortnight, and, sometimes at least, two broods are reared in the season, Mr. Cecil Smith having shot a bird on the 1st September which could only have just left the nest. They are partial to grain, pulse, and seeds of various sorts, and, like other members of the family, they drink regularly. Their flight is rapid and, amongst trees, remarkably tortuous. The note is a low plaintive *coo*, uttered more especially by the male, and the pleasure experienced by the lover of nature on hearing this harbinger of returning summer is second only to that caused by the earlier note of the Cuckoo. Being somewhat susceptible to cold, the majority of the Turtle Doves take their departure for southern climes in September; but in sheltered situations, and especially in southern counties, some remain considerably later, and an example has even been obtained as late as 18th November. The Report of the Committee of the British Association on the Migration of Birds in 1880, shews that fifteen struck the Casquets lighthouse between

10 P.M. and 3 A.M. on September 7th-8th. In the autumn, young and old birds may be found in small flocks upon the stubbles and among the root-crops, and are at that time decidedly beneficial to the agriculturist by devouring the seeds of numerous weeds.

In Cornwall it appears to be a somewhat irregular visitant, nor is it very common in Devon, but in the other southern counties, and up to Lincoln, it may be described as generally distributed, and breeding where the nature of the country is suitable to it. Shropshire, especially between Shrewsbury and Ludlow, seems to be a favourite district; and Mr. Eyton says that it is known there by the name of the Wrekin Dove. In western Wales it is rare, but it occurs in Lancashire, Westmoreland, and Cumberland. As a rule, however, to the north of the line of Sheffield it can only be considered as a straggler on migration; but it has recently been known to breed in Durham, although not as yet in Northumberland. The last remark applies to Scotland, although it has occurred in many counties, especially in those on the western side of the kingdom: on migration it also strays to the Hebrides, to the Orkneys, and to the Shetlands. In some of the wooded parts of Ireland it is generally distributed, but in the western districts it was formerly unknown, and notwithstanding the increase of larch and other plantations, Mr. R. Warren has only observed three specimens in Mayo and Sligo within the last twenty years.

A straggler to the Færoes, it occurs throughout a great part of Scandinavia, and even at such an elevation as Quickjok, although somewhat rare and local in Denmark. Throughout Central and Southern Europe it is found from spring to autumn, being especially abundant in the south at the epochs of migration; in South Russia it occurs in large flocks; it abounds in Asia Minor, Palestine and Persia, chiefly on passage, and was obtained by Dr. Henderson in Yarkand. In Turkestan, South-western Siberia, and India it is represented by *T. ferrago*, Eversmann, in which the tips of the feathers on the side of the neck are slate-grey and not white; and eastwards, again, the latter species is replaced by *T. orientalis*. South of the line of the Mediterranean, it occurs at Madeira and in the Canaries, and is found throughout Northern Africa to Egypt, where Captain Shelley says that it breeds: its representative, *T. isabellinus*, which is also a migrant, being, however, the more abundant species there. Von Heuglin met with *T. communis* in the Dahlak archipelago, in the Red Sea, and on the shores of the Tzana Lake in Abyssinia (12° N. lat.), at an elevation of over 6,000 feet, during the month of May.

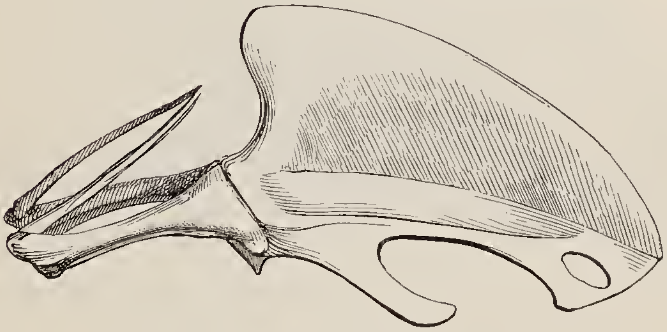
The adult male in summer has the beak brown; the irides reddish-brown; bare skin about the eye red; crown, nape, and hind neck bluish-ash, inclining to brown; on the lower part of the side of the neck are several rows of black feathers broadly margined with white; scapulars, back and rump ash-brown, with darker centres to each feather; the larger and the external smaller wing-coverts dull grey; the remainder with the tertials cinnamon-brown with dark centres; quill-feathers clove-brown; upper tail-coverts and the two central tail-feathers clove-brown; the other tail-feathers lead-grey broadly tipped with white, which runs up the whole outer webs of the two exterior feathers; chin nearly white, neck and breast pale vinous; belly, vent, and under tail-coverts white; under surface of the tail-feathers black with broad white tips, as on the upper surface; under wing-coverts and flanks bluish-grey; tarsi and feet red; claws dark brown.

The whole length is about eleven inches and a half: from the carpal joint to the end of the wing seven inches; the second quill-feather a shade longer than the first, which again is longer than the third.

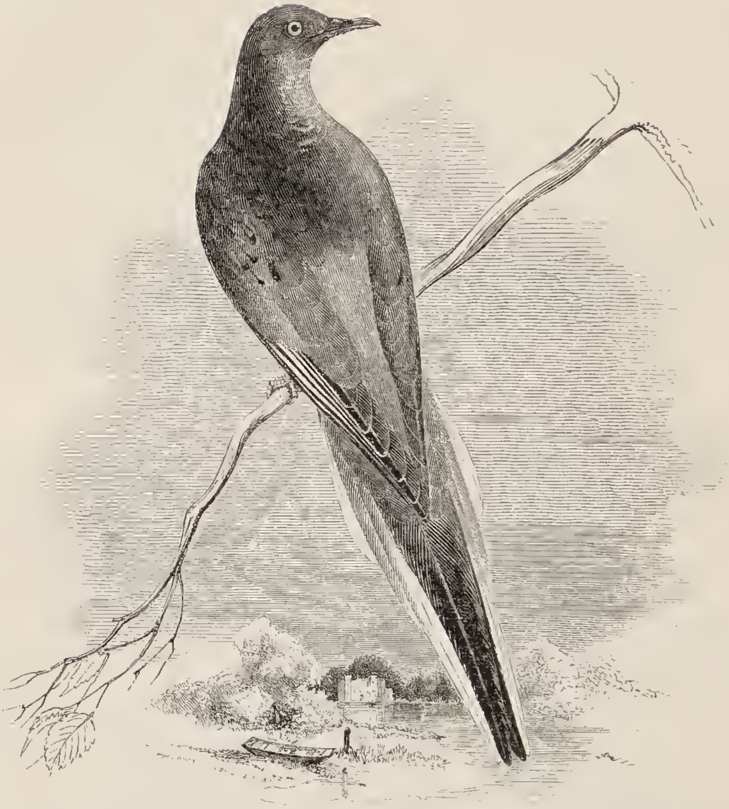
The colours in the female are less bright and pure than those of the male, and she is rather smaller in size.

In young birds, prior to the autumnal moult, the general colour of the head and body is hair-brown; the back rather darker than the side of the neck, on which there are no black and white feathers; the wing-coverts tipped with buffy-white; the quill-feathers slightly tinged on their outer edges with rufous; belly and under tail-coverts white; flanks bluish-grey; tail-feathers above hair-brown, on the under surface blackish-brown: the outer feathers on each side with the external web, and the next two with the ends, white; tarsi and feet brown. Early in September the vinous tint is assumed on the neck and breast, and the black and white feathers which form the half collar begin to make their appearance.

The upper figure in the engraving at the head of this subject represents an adult bird; the lower figure was taken from a young bird of the year. The vignette represents in outline the form of the breast-bone of this species, of the natural size.



COLUMBÆ. *COLUMBIDÆ.*



ECTOPISTES MIGRATORIUS (Linnæus*).

THE PASSENGER PIGEON.

Ectopistes migratorius.

ECTOPISTES, *Swainson*†. Bill small, slender and notched. Wings rather elongated, pointed; the second feather longest. Tail very long and extremely cuneate. Tarsi very short, half-covered anteriorly by feathers; anterior scales imbricate; lateral scales small and reticulate.

THE AMERICAN PASSENGER PIGEON was included in the first Edition of this work on the strength of the occurrence of a single specimen recorded by Dr. Fleming in his 'History of British Animals,' p. 145, as having been "shot while perched on a wall in the neighbourhood of a pigeon-house,

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[*] *Columba migratoria*, Linnæus, Syst. Nat. Ed. 12, i. p. 285 (1766).

[†] Zoological Journal, iii. p. 362 (1827).

at Westhall in the parish of Monymeal, Fifeshire, the 31st of December, 1825. The feathers were quite fresh and entire, like those of a wild bird." To this in the 2nd and 3rd Editions was added the record of another, which was sent to Mr. John Norman, of Royston, for preservation, the following notice of the occurrence being contributed by Mr. Hale Wortham. This bird (now in the Saffron Walden Museum) was obtained between Royston and Chishill, early in the month of July, 1844, by the sons of the tenant of the farm called Known's Folly, about two miles east of Royston. When the lads first saw the bird it appeared so much exhausted that they could have knocked it down with a pole, if they had had one; they, however, fetched a gun and shot it. When examined the crop was quite empty, but in the stomach there were some few seeds, resembling cole-seed, and a few small stones, but no barley or any traces of artificial food. The plumage was perfect, and neither the wings, the tail, nor the legs exhibited any sign that the bird had been in confinement. Of the correctness of the identification of these two examples there can be no question; but it will be observed that in neither case does the date of the occurrence correspond with that of the usual periods of migration. Moreover, although there is no proof that Passenger Pigeons were brought over to this country prior to 1825, yet Audubon states that in March, 1830, he bought about 350 of these birds in the market of New York, and carried most of them alive to England, distributing them amongst several noblemen (Orn. Biog. i. p. 326); thus shewing that there was then no difficulty in bringing them over; and, as a matter of fact, they have subsequently been imported with frequency.

The next instance is recorded by Thompson in the 'Birds of Ireland,' iii. p. 443, in which he quotes the following letter from Mr. R. D. Fitzgerald, Junr., writing from Tralee in July 1850:—" I had in my possession, about two years ago, a Passenger Pigeon which was caught near this town when unable to fly from fatigue. From this circumstance there can, I think, be no doubt that it came direct from America, as a bird of its powers of flight would not have been exhausted unless it came from some very great distance. It never became tame, though I had it in confinement for about two years, at first alone, and afterwards in company with other pigeons. It would walk backwards and forwards in a very shy manner when any one looked at it, and always avoided the other birds." Thompson adds: "The account of this individual leads one to believe that *it* may have crossed the Atlantic."

The fourth example is recorded in a note by Lord Binning in Turnbull's 'Birds of East Lothian,' p. 41 (1867), as being in the collection of Lord Haddington, who shot it at Mellerstain in Berwickshire; adding that a gentleman in that county was known to have turned out several Passenger Pigeons shortly before this one was shot, and it was rather remarkable that nothing was heard of the others. A supposed Passenger Pigeon was recorded in 'The Field,' September 11th, 1869, as having been shot near Melbourne, in Derbyshire, but the bird was not preserved. The latest undoubted occurrence is that of an example shot near Mulgrave Castle, Yorkshire, by Lord Harry Phipps, and examined in the flesh on 13th October, 1876, by Mr. John Hancock, who, in the 'Natural History Transactions of Northumberland and Durham,' v. p. 338, described it as follows:—"The quill-feathers in the wings were much worn and broken, and in the forehead above the bill they are apparently worn off to the skull, as though the bird had been trying to get out of a cage or some other enclosure; therefore I cannot come to any other conclusion than that this specimen, a female, had made its escape from confinement."

There is no authentic record of the occurrence of the Passenger Pigeon on the Continent of Europe; or even on Heligoland, famed for its attractiveness to American stragglers. As regards two at least of the above examples obtained in the British Islands, there seems to be a strong probability that they were birds which had acquired their freedom; but with regard to the others, it may be borne in mind that this species is capable of long-continued flights, and is known to pass over a great extent of country with a rapidity which Audubon estimated as at least a mile a minute. Passenger Pigeons are frequently captured in the State of New York with their crops still filled with the undigested grains of rice that must have been taken in the distant fields of Georgia and South Carolina, apparently proving that they had passed over the intervening space within a few hours. After weighing these facts, it has been deemed advisable on the whole to retain this species in the present Edition.

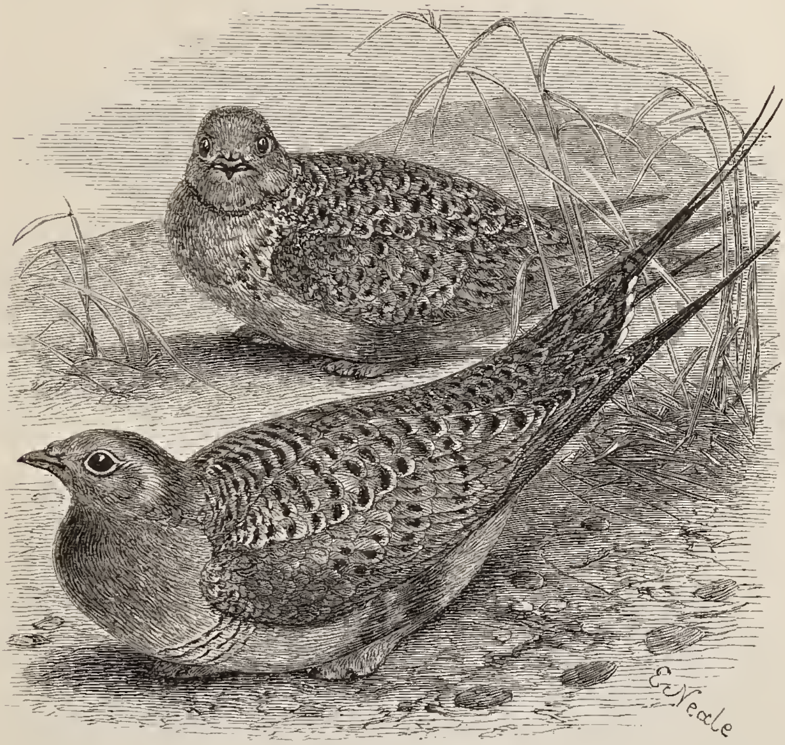
This beautiful Pigeon is found throughout North America from the Atlantic to the great Central Plains, to the west of which its food supply is limited, and its presence correspondingly restricted: it has, however, been recently obtained on the Pacific slopes, and in Nevada. Northwards it was observed on the Mackenzie River as high as 65°, whilst on the coast of Hudson's Bay it only reached 58°, even in warm summers: as a straggler, however, a young male bird is recorded by Sir James Ross as having flown on board the *Victory* during a storm, whilst crossing Baffin's Bay in latitude 73½ N., on the 31st July, 1829. In the Southern States it is of comparatively rare occurrence, but it has been found breeding down to 32° N. in Mississippi; as a straggler it has visited Cuba, and, perhaps, the Bermudas. Considerations of food, and not of temperature, mainly influence its migrations, for large columns frequently move northwards early in March with 20° of frost. Graphic accounts of its migrations, and its immense breeding communities, will be found in the ornithological works of Audubon, Wilson, and, for more recent information, the 'History of North American Birds,' by Messrs. Baird, Brewer and Ridgway, may be consulted. Its food consists largely of the service-berry (*Amelanchier alnifolia*), acorns and beech-mast, and as soon as the supply becomes exhausted, the immense flocks suddenly disappear, and do not return for a long period.

The nest is composed of a few dried twigs laid crosswise, and eggs may be found by the middle of March. It has been stated that only one egg is laid, but subsequent experience has shown that, as with other Pigeons, two is the usual number: they are white, of an oval shape, and average 1·5 in length by 1·1 in breadth. Incubation lasts sixteen days, the male taking turns with the female. An account of the breeding of the Passenger Pigeon in the Zoological Gardens will be found in the Proceedings of the Society for 1833, p. 10, and other similar instances are on record.

In the adult male the beak is black; head, back of the neck, wing-coverts, back, and upper tail-coverts bluish-grey; sides of the neck reddish-chestnut, richly glossed with metallic gold and violet; scapulars, tertials, and middle of back olive-brown; primaries lead-grey with lighter coloured outer margins, the shafts black; the tail, of twelve feathers, long, cuneiform; the four middle tail-feathers the longest, lanceolate and pointed; the outer four on each side graduated; the middle pair dark brown; the rest pearl-grey on the outer web, white internally, each with a patch of reddish-brown at the base of the inner web, followed by another of black; chin bluish-grey; throat and breast purplish-chestnut, becoming violet on the belly and flanks; vent and under tail-coverts white; legs and feet red. Total length seventeen inches; wing eight inches and a half.

The female is smaller, and much duller in colour; beneath, pale ash instead of chestnut, except a tinge on the neck.

Young birds have most of the feathers of the head and body margined with dirty white.



Syrrhaptes paradoxus (Pallas).[*]

PALLAS'S SAND-GROUSE.

Syrrhaptes, *Illiger*.[†]—Bill small, gradually decurved from the base to the point; nostrils basal, hidden in the feathers; wings very long, pointed, the first primary longest; tail, of sixteen feathers, cuneate; the two central ones long and tapering; tarsi very short and strong, covered with downy feathers to the toes, which are three in number, all in front, and united by a membrane as far as the claws; hallux obsolete; soles rugous; claws broad and obtuse.

In the 'Proceedings of the Zoological Society,' 1882, pp. 312–332, Dr. Hans Gadow has recently published the results of a careful examination into the affinities of the *Pteroclidæ*, with special reference to the opinion expressed by the late Professor Garrod (P. Z. S. 1874, pp. 249–259), that they must certainly be included in the same sub-order with the Pigeons, although forming two quite independent families. In arriving at that conclusion, it would, however, appear that a little too much stress was laid upon the points in which the Sand-grouse resemble the Pigeons and differ from the Fowls, without equal consideration having been given to their affinities with the *Tetraonidæ* and with the Plovers. Putting aside minor points, the principal features may be briefly summed up as follows:—The nestling-plumage of the Sand-grouse is a thick downy covering like that of the Plovers and Fowls; and, like them, the young can shift for themselves, whereas the Pigeons when hatched are almost nude, and quite helpless. The suppression of the hind toe, characteristic of *Syrrhaptes*, does not occur in Pigeons or Fowls, but it is a common feature in Plovers. Unlike the majority of the *Columbæ*, the *Pteroclidæ* possess a gall-bladder; and in the great development of the cæca, they differ from the *Columbidæ*, and resemble the *Gallinæ*. Their mode of drinking is entirely different from that of the Pigeons; their flight is rapid and Plover-like, without any of the gliding or soaring motion characteristic of Pigeons; their note is certainly unlike a *coo;* and, lastly, their eggs, although elliptical in shape, are coloured, and are at least three in number, like those of many Plovers, whereas with Pigeons the eggs are two in number, and white. On the other hand, the Sand-grouse resemble those genera of Pigeons which possess an oil-gland, in having it naked: and not tufted as in the Fowls and Plovers; the skull and wing-bones are Columbine, and in their myology also the Sand-grouse are more nearly allied to the Pigeons than to any other group. After much consideration the Editor thinks it advisable to adopt for the Sand-grouse the separate Order to which Professor Huxley gave the name of *Pteroclomorphæ,** subsequently modified by Mr. P. L. Sclater to *Pterocletes.*†

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[*] *Tetrao paradoxa*, Pallas, Reise Russ. Reichs, ii., App. p. 712, Tab. F. (1773).

[†] Illiger, Prodromus, p. 243 (1811).

No event in the annals of ornithology has excited more interest than the irruption of Pallas's Sand-grouse, which commenced, so far as regards the British Islands, in 1859, and attained its maximum in 1863. The history of the visitation has been admirably narrated by Professor Newton (Ibis, 1864, pp. 185–222): details as regards the eastern counties being subsequently furnished by Mr. H. Stevenson (Birds of Norfolk, i. pp. 376–404); and from their able treatises the present abbreviated account is mainly derived.

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* P. Z. S. 1868, p. 303.

† Ibis, 1880, p. 407.

The earliest date on record of the appearance of the Sand-grouse in Britain was about the beginning of July, 1859, at Walpole St. Peter's, about two miles from the Wash, Norfolk; the example, a fine male, being secured for the Lynn Museum; and a notice of its capture communicated to the 'Zoologist,' p. 6764, and to the 'Ibis' (1859, p. 472), by the Rev. F. L. Currie. On 9th July, another male was shot from a flock of three, near Tremadoc, at the north end of Cardigan Bay, and presented by Mr. Chaffers to the Derby Museum, at Liverpool. A notice of this had already appeared in the 'Zoologist' (p. 6728), from Mr. T. J. Moore, who subsequently gave a full account of it in the 'Ibis' (1860, pp. 105–110), illustrated by one of Mr. Joseph Wolf's admirable plates. In November, 1859, Mr. George Jell, of Lydd, in Kent, preserved a specimen for Mr. Simmons, of East Peckham, near Tunbridge, and these three are all which are known to have been obtained in Great Britain prior to 1863; all statements as to arrivals during the intervening years having apparently originated in error.

On the continent, in the same year, a pair appear to have been obtained at Wilna, in Western Russia, in May; a third example was at Hobro, in Jutland; and a fourth, one of a pair which had haunted the sandhills near Zandvoort, in Holland, since July, was shot there in October. In 1860, one was obtained at Sarepta, on the Lower Volga.

In 1863 came the great invasion, extending westwards to Naran, on the coast of Donegal. To understand it, allusion must first be made to a portion of its course on the continent. The most eastern, and also the most northern locality of which there is any record, as regards this migration, is Archangel; a specimen in the Museum of that town being recorded by Messrs. Alston and Harvie-Brown,[*] another being in a private collection there; and a specimen was also obtained at Moscow.[†] The earliest *date* that can be given with precision is the 6th of May, at Skolonitz, in Moravia. By the 21st of May Heligoland was reached, and the same day the first British examples of that year, two males and one female, were shot out of a flock of fourteen, at Thropton, in Northumberland. The next day birds had reached Eccleshall, in Staffordshire, where two were shot out of a flock of about twenty; and from that date onwards the records become numerous. It is unnecessary to recapitulate the exact localities and details of each capture, so carefully worked out by Professor Newton and Mr. Stevenson; and it will be sufficient to say that in Norfolk and Suffolk seventy-five birds were obtained, a number far exceeding that obtained in any equal area. The most interesting of these instances was that of a slightly wounded bird which was taken alive near Elveden, and sent by Professor Newton to the London Zoological Gardens, where it lived for some time. In Lincolnshire several were obtained in May; and early in December about twenty were shot out of a flock numbering between forty and fifty; many more, however, are believed to have been eaten or destroyed in ignorance of their rarity.[‡] In Yorkshire about twenty-four examples were killed; and in Durham and Northumberland about twenty-six. On the eastern side of Scotland, birds were obtained in Haddingtonshire, where, besides the slain, one was kept alive by Lord Haddington; in Forfarshire, seven or eight examples; in Perthshire, Kincardine, Aberdeen, Elgin, Caithness, and Sutherland; even on Unst, the northernmost of the Shetlands, an example was obtained on 4th November, out of a small flock; and one also on Benbecula, in the Outer

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[*] Ibis, 1873, p. 66.

[†] Dresser, Birds of Europe, vii. p. 77.

[‡] Cordeaux, Birds of the Humber District, p. 80.

Hebrides,* on October 13th. In the south, before the end of June, Sand-grouse had visited the flat shores of Essex, Kent, and Sussex; the sands of Slapton, in South Devon; the Land's End, and St. Agnes, Scilly Islands. At Heanton, in North Devon, a survivor was obtained in December; and at Haverfordwest, in Pembrokeshire, another, which was seen in the flesh by the late Mr. Gould, was obtained 8th February, 1864; the latest date for these islands. Eccleshall, in Staffordshire; Oswestry; the sandy coasts of Cheshire and Lancashire; Penrith, in Cumberland, were visited; and then, after a considerable interval, Sand-grouse turned up again in Renfrewshire and Stirling. Inland they occurred in various localities: on the flats of Cambridgeshire, the sandy heaths of Aldershot, and even so near the metropolis as Barnet. In Ireland examples were killed at Ross; and at Drumbeg and Naran, both in co. Donegal; the latter being the most western locality on record. Judging from the materials available, it would appear that a large majority were obtained from May 21st onwards to the end of June, by which time the awakened and widely-spread interest in the new visitants, taking its usual forms of persecution and extermination, had done its worst. Some may have sought refuge on the continent, which they had left; but, at all events, by the middle of November they had disappeared from the favoured counties of Norfolk and Suffolk. In the remote and scantily peopled districts of the wild West a few individuals lingered throughout the autumn and winter; but even there, by February 1864, the last of the invaders of 1863 had succumbed.

The birds which arrived on our shores formed, however, but a portion of a far larger eastern horde, the main body of which, in all probability, never reached the British Islands. The meagre information as to their occurrence in Russia has already been given. From Galicia, on the 6th of May, the Sand-grouse pressed onwards to Pesth, Vienna, and other Austrian localities; the outlying wing of the army sending forth its stragglers as far south as Rimini, on the Adriatic;

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* R. Gray, Birds of the West of Scotland, p. 239.

Belluno and Novara, in Northern Italy; Perpignan at the eastern, and Bayonne at the western extremities of the Pyrenean chain. In France, according to Degland and Gerbe, they were found all over the basins of the Seine, the Loire, the Gironde, and the Rhone, reaching as far as the shores of the Atlantic, where the date of the last capture, at Sables d'Olonne, in Vendée, in February 1864, coincides with that of the last and one of the most western of the occurrences in England. In the Baltic they occurred both on the southern shores, and as far as Nyköping, in Sweden; whilst examples were obtained in Norway up to 62° N. lat.; and a flock even reached the distant Færoes in May. The main body appears to have swept through Germany as far as the North Sea, and finding the sandhills of the coasts of Denmark, Holland, and Belgium suited to their habits, they took up their abode there in considerable numbers. The dunes of Zandvoort, already visited by a pair in 1859, again attracted several bands, and at least one clutch of eggs was taken; but it was in Denmark that the most interesting details were obtained, and the following abstract of a paper by Professor Reinhardt, of Copenhagen, is furnished by Professor Newton:—

"Early in June last, Herr Bulow, an officer in the Custom-house at Ringkjöbing, sent the Professor several living birds which had been snared by a gunner *on their nests* in the above-mentioned district, together with four of their eggs. One of the latter was found by Herr Bulow in the box which conveyed the birds, having been laid on the journey. It was colourless, indicating that it had been prematurely produced. The other three eggs were fully coloured. It appears that this gunner found two nests of *Syrrhaptes* in his own neighbourhood, and a third at a place called Bierregaard. On two of the nests both the birds (in each case the hens first and then the cocks) were caught, on the 6th June. These nests were near one another; and one, containing three eggs, consisted of a slight depression in the sand, lined with a little dry marram. The other had only two eggs, was placed among some ling, and furnished in a like manner. The third nest was similar to the first, and was half-way up a sandhill. Of the three eggs sent to Herr Bulow, he found that two were quite fresh, but in the third the fœtus had begun to form, shewing that they had been taken from different nests. Some more nests were found by other people, but unfortunately none of them were taken care of. The gunner, at Herr Bulow's request, made further search, but not until the 27th of July did he succeed in making any new discoveries. On that day he met with a flock of about a dozen birds, of which he shot two. He then went again to Bierregaard, where at last he put a bird off its nest among some stones in the sand, and containing three eggs. Next day he returned to it, set a snare, in which, after two or three hours, the hen-bird was caught; and a few hours later he procured the cock in the same way. In the interval he found, to his surprise, that one of the eggs had hatched. He took away with him the pair of old birds, the newly-born chick, and the remaining two eggs, which, on getting home, he put in a box of wool by the fire, where a second egg was hatched. The third proved to be rotten. The chicks only lived one day, and it seems they were not preserved. On that same day (the 28th), while waiting about for these birds to be caught, he stumbled on another nest, from which he shot both the owners."

Returning to the subject of migration: the Sand-grouse visited Heligoland, where about thirty-five were shot in May and June, and a few in autumn, when they also occurred at Norderney; Borkhum in May and June, and again on their return, in September. The last recorded individual of this invasion was obtained alive, having flown against the telegraph wires in June 1864, near Plauen, in Saxony, and was sent to the Zoological Gardens in Dresden.* Mr. Dresser states that about twenty were said to have been seen in that year, and three of them shot at Brody, Galicia; but this record may possibly refer to the occurrence in previous years already cited.

As regards the numbers of this invasion, it is undoubted that a very large proportion passed unrecorded, even in the

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* E. Opel, Journal für Ornithologie, 1864, p. 312.

British Islands; and, when writing in 1864, Professor Newton considered that the total could be set down as under 700; an estimate which is probably a very moderate one, especially when the number of birds taken and eaten in France is considered.

In 1872 a small flock of Sand-grouse were reported to have frequented the coast of Northumberland, opposite the Fern Islands, from the end of May to 6th June; but a bird which was at first stated to have been shot, proved, on enquiry, to have got away.* On 25th and 29th June four birds of this species were described as having been seen near Girvan, Ayrshire; † but there is no confirmatory record of similar occurrences in other parts of the British Islands or on the Continent.

On 4th May, 1876, a solitary example, obtained near Modena, in Italy, might have been expected to prove the precursor of another invasion; but no further arrivals either on the Continent or in Britain appear to have been recorded until, on the 4th of October of that same year, a male and female were shot near Kilcock, co. Kildare, Ireland; a notice both of the occurrence and of the places where the specimens might be inspected, being published in 'The Field' of 14th October, by Mr. W. N. Coates. With these stragglers the list of visitants closes for the present.

Essentially a native of the Asiatic steppes, this species was first made known to Pallas as an inhabitant of those Kirghiz plains whose western boundary is the Caspian Sea. A straggler across the political frontier between Asia and Europe, reached Sarepta on the Lower Volga in the winter of 1848, and, coming under the notice of the Moravian settlement there, Herr Möschler enrolled this species in his list in 1853 as a very rare European bird. It is probable that our visitors came from this western extremity of their range. Henke (Ibis 1882, p. 220) says that Sand-grouse are occasionally found near Astrakhan in winter; and in 1876 great numbers bred on the Kirghiz steppes, where the nomads told him that they had not previously observed them. Eastwards, Pallas's Sand-grouse is found throughout the sandy wastes of Turkestan to Samarcand; throughout the Kirghiz steppes to Lake Balkash; in the deserts at the foot of the Tian Shan range; and in both the steppes and the deserts of Mongolia, and in the basin of the Tarei-nor. Colonel Prjevalsky * states that in summer it goes north even beyond the shores of Lake Baikal, where it breeds; spending the winter in those parts of the Gobi Desert which are free from snow, and in Ala-shan, where it is met with from October onwards in flocks of several thousands. Some winter in the Hoang-ho Valley in South-east Mongolia, and during severe weather the plains between Tien-sin and Pekin and of the Pechili are covered with them; the natives, who call them "Sha-chee," taking numbers of them with nets.† Southwards, this species extends to Koko-nor and Tsaidam, but it does not ascend to Kansu or Northern Thibet, being there replaced by the only other known species of the genus, *Syrrhaptes thibetanus*, an inhabitant of much greater altitudes.

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* J. Hancock, N. H. Tr. Northum. and Durham, vi. p. 87.

† R. Gray, Ibis, 1872, p. 335.

These enormous flocks feed largely on the seeds of *Agriophyllum gobicum*, so that the number of wintering birds depends on the supply of that food, although they occasionally feed on other seeds and berries. In the crops of some of those killed in Norfolk only the seeds of plants proper to the sandy coast were found, without any trace of animal or mixed food; the gizzards containing an enormous quantity of small stones and sand. They drink several times a day, preferring fresh to brackish water.

Most observers agree in describing the flight of this Sand-grouse as much resembling in its style and rapidity that of the Golden Plover. Prjevalsky says that when a large flock is on the wing, the noise is like the sighing of the wind and can be heard at a considerable distance. In the air the male birds utter a peculiar note, like "*truck-turuk, truck-turuk,*" especially when in small flocks.

Prjevalsky states that the complement of eggs is three, which is the usual number with other Sand-grouse. In the beginning of June he found in Ala-shan three nests with three eggs in each, one set being quite fresh, the two other sets very much incubated. It will be remembered that three was the largest number of eggs found in one clutch in Denmark, and three is well known to be the complement of eggs with other members of the *Pteroclidæ*. Herr Radde, however, who had excellent opportunities of observing this species in Dauria, and whose detailed account is translated a little further on, says that "the eggs go up to four," although it will be observed that he never mentions *finding* more than three; and in the frontispiece to the 'Reisen im Süden von Ost-Sibirien,' Band ii., he figures a pair of birds by the side of a nest containing four eggs. There may be some mistake in this, or it may point to another paradoxical character in this species, indicating a closer affinity to the Plovers than is shewn by the other members of the order; but, at all events, such a distinct assertion must not be passed over in silence.

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* In Rowley's Miscellany, pt. ix. p. 382.

† Swinhoe, Ibis, 1861, p. 341.

The eggs are elliptical, stone-buff in colour, with darker blotches of purple-brown, and average 1·5 in length by 1·1 in breadth.*

The following is a translation of the full account given by Herr G. Radde in his above-cited work, pp. 292–294:—

"The basin of the Tarei-nor, in Dauria, is situated in about 50° N. lat. and 116° E. long. The nest is very simple, resembling those of the other Sand-grouse, and several pairs, but never many, usually breed in company. In the salt-impregnated soil on the Tarei-nor, usually on the ground which has been dry for years, a shallow hollow about five inches in diameter is scratched out, and the edge is lined with a few salsola shoots and grasses; but the latter are frequently absent. Eggs go up to four (*i.e.*, do not exceed four). *Syrrhaptes* does not winter regularly on the north-eastern edge of the elevated Gobi, in the low spurs of the northern portion of the Himalaya range. On the 10th (22nd) March,

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* An egg laid in the Zoological Gardens on 21st June, 1861, by one of several birds sent from China, was described and figured by Professor Newton, P. Z. S. 1861, p. 397, pl. 39, fig. 1.

1856, when at night the thermometer fell to − 13° Réaumur, and at midday rose to + 2°, the first flock of the present species arrived at the Tarei-nor. They flew in close skeins like Plovers. In the spring these flocks are composed of four or six pairs, as the birds have then paired, but in the autumn more than a hundred collect together in one flock. When on the wing they utter a very audible cry, from which their Mongol name (Njüpterjün) is derived; and the pairs fly close together. A male, shot on the 17th (29th) March, had the testes as large as a cedar-nut; and late in March eggs are to be found, for a female shot on the 30th March (11th April) had an egg ready for exclusion in her ovary. This Sand-grouse breeds twice, and sometimes three times, in the season. On the 20th April (2nd May) I found fully-formed young in three eggs in one nest, and the next day I took two fresh eggs. On the 14th (26th) May I again found fresh eggs. The young are certainly able to shift for themselves when hatched, and this fact places them decidedly near the Fowls, in spite of their manifold relationship to the Pigeons. I first saw the young birds running after their mother on the 30th April (12th May). In the morning, especially in the spring, they visit the fresh water to drink regularly at the same hour, and in April this was at nine o'clock. Single pairs arrived from different directions, calling and being answered by those which had already arrived, and which they then joined: they stood on the edge of the water in a line, usually eight to twelve together, not remaining there long, but soon leaving, apparently to feed. They are fond of the young juicy shoots of the *Salicorniæ*, and regularly graze on these as the Bustard does on some of the grasses. In the spring I found the crop and stomach full of the seeds of the *Salsola*. During the summer they are fond of basking in the sun, and I then generally found several pairs together. Like fowls, they scratch a hole in the greyish-white salty hillocks which cover large tracts on the banks of the Tarei-nor, and on which the salt-plants grow. I have often watched them resting in these places; at first they run about as if searching for something, and then about eleven o'clock, when it becomes hot, they rest, scratching a hole in the ground, and, like barn-door fowls, working themselves in comfortably, lying on one side, with their usually smooth plumage puffed out. They do not place a sentinel, but sit motionless, their black-sprinkled plumage assimilating so well with the soil that they can scarcely be distinguished. When disturbed they rise, uttering a cry, and fly off with great rapidity, as do all that hear the alarm-cry, although not belonging to the same flock. They first pack together, then divide into small flocks, and by degrees return to their resting-places. So swift are they on the wing, that it is scarcely possible for the fastest Falcon to catch them; and their flight is more rapid and straighter than that of the Pigeon. I doubt, however, if they can run far, as, when I have been watching them, although they ran swiftly, they did not continue for any distance. It is curious how the large flocks migrate away in the summer. I had a peculiar instance of this from personal observation. Late in May I went to visit the Aral Island, in the Tarei-nor, and had to pass the large tract where the lake was dried out; and in the forenoon I saw a number of flocks of Sand-grouse which inhabited this place, and were so shy that I could not possibly approach them, so, after many unsuccessful attempts to shoot them, I gave up the chase till the evening. At sunset they had collected into two large flocks of at least a thousand individuals each, and were making a great noise; and it was now impossible to approach them. After being several times disturbed, they left the shores of the Tarei-nor and went to the neighbouring wintering-place of the flocks (of sheep, &c.), where, from the numerous droppings, there was always a large blackish-brown patch on the sterile steppe. Here they remained undisturbed, as the darkness prevented me from following them; but they continued calling loudly. On the next day none were to be seen; and later on I did not see one. The herdsmen also assured me that there were no Sand-grouse left, but that they would return in autumn; and such proved to be the case; for in October, when north of the Dalai-nor, a large, noisy flock passed me, travelling from the south to the north. Here, on the north-east of the Gobi, if they remain in the autumn, the natives calculate on a mild winter. . . . . . The flesh of this Sand-grouse is white and very good."

From the above narrative it will be observed that this Sand-grouse is liable to sudden movements in large flocks, but of the cause which produced the invasion of 1863 no more is known now than it was then, although various hypotheses have been started. As regards the merits of its flesh, which Herr Radde naturally found excellent in the deserts of the Tarei-nor, Mr. Stevenson, experimenting upon examples which had first been skinned, found them, at their best, nearly equal to a French Partridge; the only resemblance to Grouse consisting in the two colours of the flesh, the outer portion of which is dark and that nearest the bone white: a feature which, it may be remarked, is common to the other Sand-grouse.

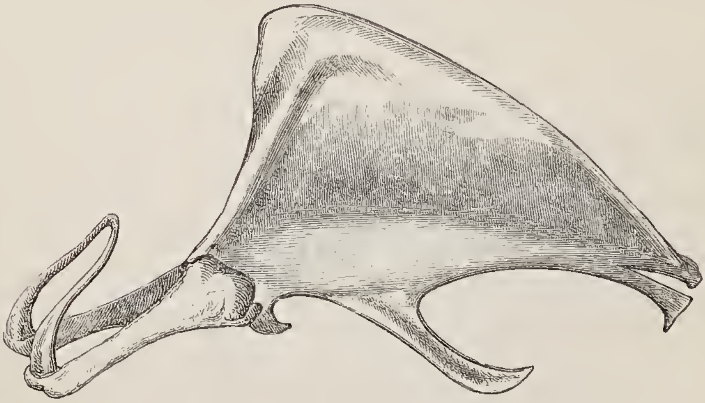
In the adult male the bill is horn-colour, the crown of the head yellowish-grey, with dusky streaks; hind neck crossed by a band of orange, more intense at the sides, rest buff-grey; back and scapulars ochraceous, barred with dark brown and black, as are the rump and upper tail-coverts, on which the bars gradually change into streaks; primaries lavender, with black shafts and dark tips, the outer quills attenuate, especially the first, which is the longest; secondaries buff on the inner and black on the outer webs; wing-coverts buff, bordered with chestnut, forming a conspicuous band along the wing; tail of sixteen feathers, mostly tipped with white, grey centres, and rich buff inner webs barred with dark brown: the central pair buff, barred with black on the upper parts, then passing into grey, and then to dark brown near the filamentous tips, often exceeding the others by fully three inches; chin buff; throat orange; lower parts buff, with a narrow band of black-edged feathers on the chest, and a broader dark brown band on the abdomen and flanks; under wing-coverts pale buff; under tail-coverts white, the lower ones long and pointed, with dark centres; legs and feet, down to the toes, covered with buff-white feathers.

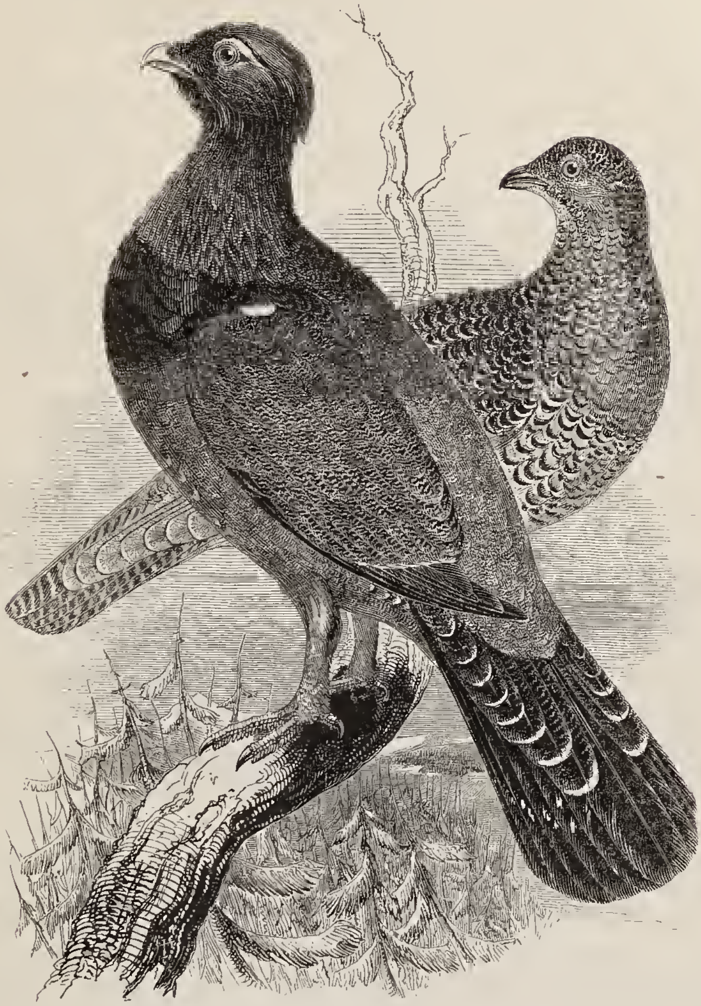
The young male differs in having the head more streaked with black; the throat and neck are buff instead of orange, with a faint black gular ring; the band across the chest is at first absent; the primaries are more sandy-coloured; the upper parts are much spotted instead of being barred, and the central rectrices are hardly prolonged.

The adult female has the crown and nape buff streaked with black, without the golden-orange of the male; the throat and sides of the head orange-buff, with a narrow black gular terminal band; upper parts and wing-coverts rather spotted than barred with black; chest-band very indistinct, but feathers on the abdomen dark brown throughout their greater parts; general colours duller, and central rectrices less elongated than in the adult male.

Total length of the male about fifteen inches: wing ten inches; first primary one inch longer than second; central rectrices extending three and even three and a half inches beyond the others. Female slightly smaller. Weight of well-conditioned birds of both sexes ten and a half ounces. Examples with recently moulted quills were obtained on 26th June, and birds shot in October, after their full change, were remarkable for the beauty and freshness of their plumage.

The vignette represents the sternum of this species.





Tetrao urogallus, Linnæus*.

THE CAPERCAILLIE,

WOOD GROUSE, OR COCK OF THE WOOD.

Tetrao urogallus.

Tetrao.†—Bill short, strong; upper mandible convex, and arched from the base to the tip. Nostrils basal, lateral, partly closed by an arched scale, and

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[*] Syst. Nat. Ed. 12, i. p. 273 (1766).

[†] *l. c.*

hidden from view by small closely-set feathers. Space above the eye naked, the skin red with papillæ, and fringed. Wings short, and rounded in form; the fifth quill-feather the longest. Tail of eighteen feathers. Feet with the toes naked, three in front united as far as the first joint, and one toe behind, short, the edges of all pectinated. Tarsi feathered to the junction of the toes.

The term Capercaillie, sometimes written Capercally and Capercailzie, is of Gaelic origin, and, as usual, the best authorities differ in their interpretation of it. Both the derivation and the orthography are discussed at some length in Mr. J. A. Harvie-Brown's excellent monograph entitled 'The Capercaillie in Scotland' (1879), and, more tersely, by Professor Newton in the 'Encyclopædia Britannica.' The balance of authority appears to be in favour of the component words *Cabhar*, an old man (and by metaphor an old bird), and *Coille*, a wood; *i.e.* the old bird of the wood. It has also been derived from the Celtic *gobur*, a horse, or from *gabur*, a goat; and, bearing in mind the extension of the feathers on the throat of the male bird, like the beard of a goat, and his amorous behaviour in spring, the derivation seems not unlikely. The Scottish poet Dunbar, who died about 1520, uses *Capircalyeane* as a term of endearment; and Hector Boetius, in 1526, alludes to the bird as the Auercalze, or horse of the woods; it is cited in the bill of fare of the Earl of Atholl when he entertained James V. in 1528-29, and by Bishop Lesly in 1578, who was the first to indicate a definite locality—Lochaber—as its abode. In the account given by John Taylor, the Water-poet, of his "visit to the Brea of Marr," in 1618, *Caperkellies* are specified along with "heathcocks and termagants," names which are subsequently found in some old Acts of the Scottish Parliament, *circa* 1621, and in some later records, which, however, convey little information. In 1651 it was already scarce; for in the 'Black Book of Taymouth' a friend of the Laird of Glenorquhy writes to him: "I went and shew your Capercailzie to the king in his bedchamber, who accepted it weel as a raretie, for he had never seen any of them before." At the time of Pennant's Tour in Scotland, in 1769, it was nearly extinct, and he appears to have seen only one example, which was killed in the Chisholm's country to the west of

Inverness. It is true that Graves, writing in 1813, mentions two males shot respectively about six years, and two years previously, the latter by Captain Stanton, near Burrowstoness; but there is really no satisfactory account of its occurrence from the time of Pennant until its restoration in the present century. The causes of its extinction had probably been at work for a considerable time; the principal ones being the destruction of large tracts of pine forests by fire to get rid of wolves, and other "vermin"; the wasteful destruction of timber, and the altered conditions thereby produced. In Ireland, where it certainly existed, although Giraldus Cambrensis, Willughby and Ray give little but its name, similar causes led to its extermination. Writing in 1772, J. Rutty (Nat. Hist. of the County of Dublin, i. p. 302) says, "one was seen in the county of Leitrim about the year 1710; but they have entirely disappeared, owing to the destruction of our woods." Pennant also states that about 1760 a few were to be found about Thomastown, in Tipperary; and Longfield, in his treatise on 'The Game Laws in Ireland,' says that the "Wild Turkeys" of Act George III. must have been Capercaillies; adding that they were not extinct so late as 1787.* After careful investigation of the existing evidence, Professor Newton is of opinion that the species was exterminated about the same time in both Scotland and Ireland; the original British race becoming wholly extinct, and no remains of it being known to exist in any museum.†

As regards the occurrence of the Capercaillie in England, within the last two years Mr. James Backhouse, of York, has discovered in the caves of the mountain-limestone of Teesdale, at an elevation of about 1,600 feet, numerous bones, which have been pronounced by Professor Newton to be those of this species. In a letter to the Editor, Mr. Backhouse writes as follows: "Among these [bones] is one nearly perfect *humerus* belonging to a male bird of full size; others, less perfect, to the female of ordinary size; whilst others, again, are smaller than those of the type. From the abundance of the remains of this bird, and their association with bone implements, there can be no doubt, I think, that the Capercaillie was, in past ages, a common denizen of the forests of the north of England, and was freely used as an article of food by the cave-dwellers. Remains of the Bear, Wolf, Lynx, Black Grouse, Red Grouse, Woodcock, Curlew, Long-eared Owl, and Grey-lag Goose were found in proximity." This discovery shews that a large portion of the north of England was formerly covered by coniferous woods. Mr. Harting states that bones of the Capercaillie have been found amongst Roman remains at Settle; and that he has met with old grants (*circa* 1343–1361) of land in the county of Durham, held by the tenure *inter alia* of paying "one wode-henne yerely" to the Bishop of Durham for the time being.* There seems to be no other evidence of the existence of the Capercaillie in England, or in Wales, within historic times, beyond the statement by several authorities that it was known to the Britons by the name of *Ceiliog Coed.*

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* J. A. Harvie-Brown, *op. cit.* p. 154.

† Encyc. Brit. Ed. 9, v. p. 54.

In the wooded parts of Scandinavia it is abundant, reaching as far as 70° N. lat., but towards the limits of the pine forests a diminution is observable both in numbers and in size. It is also very numerous in the forests of Russia, as far south as the department of Saratov on the left bank of the Volga, in about 52° N. lat. In Denmark its remains are found in the kitchen-middens of the pre-historic races who inhabited the country when it was covered with the pine forests which have long since given way to the oak and the beech; and under these altered conditions the bird became extinct. Throughout the forests of Northern and Central Germany, Switzerland, Tyrol, and on the pine-clad mountain frontier of North Italy it still exists; a few still linger in the Vosges and the Jura; and its remains have been obtained in several of the bone-caves of France. From Auvergne it has nearly, if not altogether, disappeared; and on the northern slope of the Pyrenees it has become somewhat rare, but it is not uncommon in the wild forests on the Spanish side, ranging to the extreme west of the Asturias, along the Cantabrian range. Passing eastward again, it is found in the Carpathians, and, probably, in portions of the Balkans; but Dr. Krüper has failed to discover any evidence of its reported occurrence in Akarnania; a few stragglers are said to be found in Bessarabia on the northern side of the Black Sea, but it does not reach to the Caucasus. In Asiatic Siberia, as represented by a very grey form, it is resident in suitable localities as far east as Lake Baikal; but in Amoorland and Kamtchatka its place is occupied by a distinct species, *Tetrao urogalloides* of Middendorf (not to be confounded with the "*Tetrao, hybridus, Urogalloides*"[*] or *T. urogallides*[†] of Nilsson, which is a hybrid between the Black-cock and the hen Capercaillie). The real *Tetrao urogalloides* of Middendorf is a more slender bird: the head and neck are rich purple-blue, in which respect alone it resembles the above-mentioned hybrid; the wing-coverts and tertials are much margined with white, and the upper tail-coverts are broadly tipped with the same, and the tail is much longer in proportion and more graduated than in the Capercaillie—not in the least forked, as it is in the hybrid. Owing to the same name having been applied to a genuine, but little-known species, and also to a far more common and well-known hybrid which will be treated later on, much confusion has arisen, and even some recent authorities appear to be unaware that *T. urogalloides* of Eastern Siberia is a perfectly distinct bird from *T. urogallus*.

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* Zoologist, 1879, p. 468.

About the end of the year 1827, or early in January, 1828, Lord Fyfe imported a cock and hen from Sweden, only the former of which reached Braemar; and in 1829 another cock and hen; but although the latter laid a couple of dozen eggs in the ensuing April, this attempt at restoration was a failure. The probable reasons for this, with a long account of the experiment, are given in Mr. Harvie-Brown's able monograph above cited, and from which many subsequent particulars are taken. In 1837, however, Lawrance Banville, head keeper to the late Sir Thomas Fowell Buxton, of Norfolk, was sent over to Venersborg, in Sweden, the residence of that veteran sportsman, the late Mr. Lloyd, who had volunteered his services, and by June 24th "Larry" was back at Taymouth Castle with thirteen cock and sixteen hen Capercaillies, which were handed over to the successful care of Mr. James Guthrie, Lord Breadalbane's head keeper. More were brought over in 1838, both to Taymouth and also to East Norfolk, but the latter attempt at introduction was not crowned with success. By the end of 1839 there appear to have been fifty-four adult Capercaillies at Taymouth; in 1841 favourable reports were received of the hatching of eggs under grey-hens; and by 1863 Guthrie estimated the birds on the estate at 2,000.

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[*] Skand. Fogl. ii. p. 72 (1835).

[†] *Op. cit.* ii. p. 73 (1858).

From Taymouth, the centre of restoration, and all along the Tay valley, as far as Dunkeld, Capercaillies spread, and although Perthshire still remains the head-quarters, Forfarshire ranks not far behind. In Fifeshire, where the woods are of smaller extent, the species is more local, and in Kinross-shire, where there are no extensive pine-woods, it is comparatively rare. It is merely a straggler to Clackmannanshire, but through Stirlingshire it is advancing, and will probably extend in time to the southern counties of Scotland by that route. It is needless to enumerate many other localities in which Capercaillies occur, either, as in Arran, owing to separate attempts to emulate the success of the first experiment, or as stragglers. They are much given to migration, especially from forests of an older to those of a younger growth, which are more suitable to their requirements of food and shelter combined. Spruce, Scotch fir and larch forests are their favourite haunts, but beyond these limits they are pressed by the increase of numbers; and they are now often found in coverts of birch and oak, and in autumn on the heather-covered hillsides. Naturally they have followed the course of the valleys, choosing by preference a southern exposure: the hens preceding the males by one or two years.

Mention has already been made of the attempt to introduce the Capercaillie into Norfolk; and similar ill-fortune has attended several other essays. The Hon. Gerald Lascelles is endeavouring to introduce the species into the New

Forest. In Ireland, Lord Bantry failed to stock the woods of the neighbourhood of Glengariff, and Colonel E. H. Cooper, of Markree Castle, co. Sligo, has informed the Editor that his birds have all perished.

The following description of the habits of the Capercaillie is taken from Mr. Lloyd's 'Field Sports of the North of Europe,' written during his long residence in Sweden:—

"The Capercali is to be found in most parts of the Scandinavian peninsula; indeed as far to the north as the pine-tree flourishes, which is very near to the North Cape itself. These birds are, however, very scarce in the more southern of the Swedish provinces. The favourite haunts of the Capercali are extensive fir woods. In coppices, or small cover, he is seldom or never to be found. Professor Nilsson observes that those which breed in the larger forests remain there all the year round; but those which, on the contrary, breed on the sides of elevated mountains, or in a more open part of the country, in the event of deep snow, usually fall down to the lower ground.

"The principal food of the Capercali, when in a state of nature, consists of the leaves and tender shoots of the Scotch fir, *Pinus sylvestris*. He very rarely feeds upon those of the spruce, *Pinus abies*. He also eats juniper berries, cranberries, blueberries, and other berries common to the northern forests; and occasionally also, in the winter time, the buds of the birch, &c. The young Capercali feed principally at first on ants, worms, insects, &c.

"In the spring of the year, and often when the ground is still deeply covered with snow, the cock stations himself on a pine, and commences his love-song, or play, as it is termed in Sweden, to attract the hens about him. This is usually from the first dawn of day to sunrise, or from a little after sunset until it is quite dark. The time, however, more or less, depends upon the mildness of the weather, and the advanced state of the season. During his play, the neck of the Capercali is stretched out, his tail is raised and spread like a fan, his wings droop, his feathers are ruffled up, and, in short, he much resembles in appearance an angry Turkey-cock. He begins his play with a call something resembling the word *peller, peller, peller;* these sounds he repeats at first at some little intervals; but as he proceeds they increase in rapidity, until at last, and after perhaps the lapse of a minute or so, he makes a sort of gulp in his throat, and finishes by drawing in his breath. During the continuance of this latter process, which only lasts a few seconds, the head of the Capercali is thrown up, his eyes are partially closed, and his whole appearance would denote that he is worked up into an agony of passion.

" On hearing the call of the cock, the hens, whose cry in some degree resembles the croak of the Raven, or rather, perhaps, the sound *gock, gock, gock,* assemble from all parts of the surrounding forest. The male bird now descends from the eminence on which he was perched to the ground, where he and his female friends join company.

" The Capercali does not play indiscriminately over the forest, but he has his certain stations, which may be called his playing-grounds. These, however, are often of some little extent. Here, unless very much persecuted, the call of these birds may be heard in the spring for years together. The Capercali does not during his play confine himself to any particular tree, and is seldom to be met with exactly on the same spot for two days in succession. On these playing-grounds several Capercali may occasionally be heard playing at the same time. Old male birds will not permit the young ones, or those of the preceding season, to play. Should the old birds, however, be killed, the young ones, in the course of a day or two, usually open their pipes. Combats, as may be supposed, not unfrequently take place on these occasions; though I do not recollect having heard of more than two of these birds being engaged at the same time.

" Excepting there be a deep snow, the Capercali is much upon the ground in the daytime; very commonly, however, he sits on the pines, sometimes on the very uppermost branches. During the night he generally roosts in the trees; but if the weather be very cold, he not unfrequently buries himself in the snow. Considering the large size of the bird, his flight is not particularly heavy or noisy." Mr. Lloyd has not only seen this bird at a very considerable height in the air, but has known him take a flight of several miles at a time. "The Capercali lives to a considerable age; at least so I infer," says Mr. Lloyd, "from the cocks not attaining to their full growth until their third year or upward. The old ones may be easily known from their greater bulk, their eagle-like bill, and the more beautiful glossiness of their plumage. The size of these birds appears to depend, in a great degree, on the latitude where they are found. In Lapland, for instance, the cocks seldom exceed nine or ten pounds. In Wermeland, and adjacent parts, again, I have never heard of their being killed of more than thirteen pounds; whilst in the more southern provinces of Sweden,—and I have three several authorities for my statement,—they have not unfrequently been met with weighing seventeen pounds and upwards. The hen Capercali usually weighs from five to six pounds.*

"The Capercali is often domesticated in Sweden; indeed, both at Uddeholm and Risater, as well as other places, I have known them to be kept for a long period in aviaries built for the purpose. These birds were so perfectly tame as to feed out of the hand. Their food principally consisted of oats, and of the leaves of the Scotch fir, *Pinus sylvestris*, large branches of which were usually introduced into their cages once or more in the course of the week. They were also supplied with abundance of native berries when procurable. They were amply provided at all times with water and sand; the latter was of a coarse quality, and both were changed pretty frequently."

During the breeding-season the Capercaillie cock, like the males of most of the polygamous birds, are very fierce, and severe combats take place between rivals. Instances are also on record in which old males have not hesitated to attack the passers-by who infringed upon their domain, pecking at their legs and feet, and striking with the wings. Mr. Adlerberg mentions such an occurrence. During a number of years, an old Capercali cock had been in the habit of frequenting the estate of Villinge at Wormdö, which, as often as he heard the voice of people in the adjoining wood, had the boldness to station himself on the ground, and, during a continual flapping of his wings, pecked at the legs and feet of those that disturbed his domain. It is also stated that the Capercaillie occasionally has a *spel* of short duration about Michaelmas.

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* Mr. Harvie-Brown has informed the Editor that in Scotland the weight of males rarely reaches 10 lbs., and that of females does not seem to exceed 4½ lbs.

The nest is a mere hole scraped in the ground, under a tree or bush, and the eggs are from six to twelve in number: as many as fifteen being on record; they are of a pale reddish-yellow colour, mottled with brown spots and blotches, and measure about 2·2 in length by 1·5 in breadth. Incubation lasts about a month, and the young are usually hatched early in June: remaining with the mother until the approach of winter.

The adult male has the beak of a whitish horn colour; the irides hazel; over the eye a semilunar patch of naked skin which is bright scarlet; plumage of the head, the neck in front and behind, the back, rump, and upper tail-coverts, minutely freckled with slate-grey on a brownish-black ground; the feathers of the crown of the head and on the throat rather elongated; wing-coverts and wings freckled with light brown on a darker brown ground: the depth of the tint depending on the greater age of the bird; quill-feathers russet; tail-feathers nearly black, with a few greyish-white spots on the outer webs; some of the longer and lateral upper tail-coverts tipped with white; the chest of a fine shining dark green; breast black, with a few white spots; flanks and under tail-coverts greyish-black, spotted with white; under wing-coverts white, a small patch appearing on the outside near the shoulder; thighs grey; legs covered with hair-like brown feathers which over-hang the toes in winter, but are shorter in summer; toes and claws naked and black.

The dimensions of the males are subject to considerable variation, but the extreme length may be set down at three feet four inches. From the carpal joint to the end of the wing, sixteen inches: the first feather two inches shorter than the second, and the second one inch shorter than the third; the third and fourth equal in length, and longer than the others.

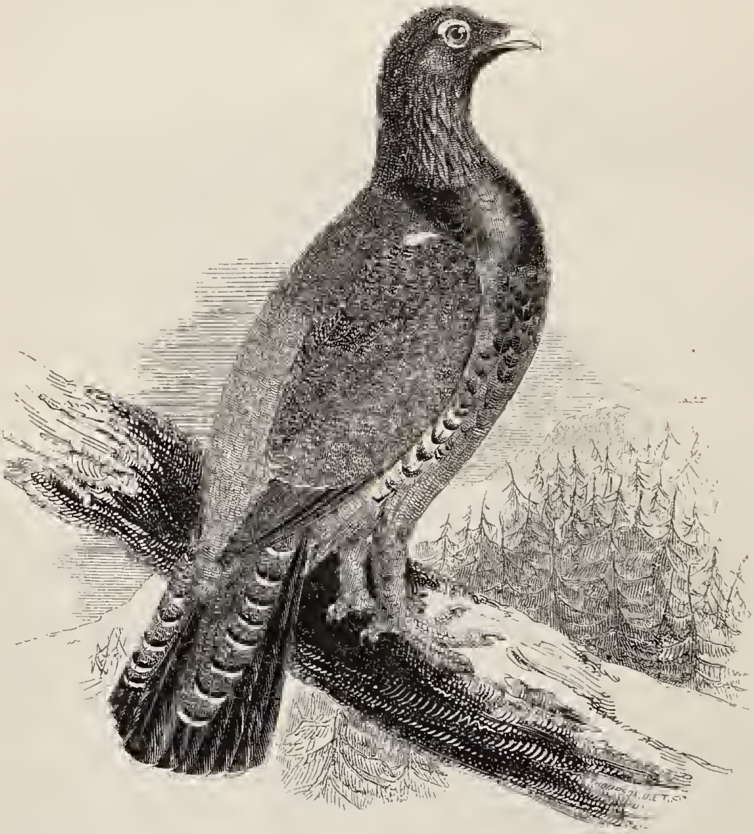
The adult female has the beak brown; the irides hazel; the feathers of the head, neck, back, wings, upper tail-coverts, and tail, dark brown, barred and freckled with yellow-brown and tipped with white; those of the neck in front and the breast are of a fine yellowish-chestnut margined with black, and with an extreme edge of greyish-white; the feathers of the flanks, vent, and under tail-coverts with broader edges of white; legs greyish-brown; toes and claws pale brown.

The whole length of the female described was twenty-six inches. From the carpal joint to the end of the wing, thirteen inches.

The young birds of both sexes in their first plumage resemble the old female, the young males afterwards obtaining by slow degrees the colours which distinguish that sex. Full plumage is not attained until the third year.

Varieties of both sexes are not unfrequent, and Nilsson mentions several. They are usually of a pale, faded grey, with a few darker markings; and Mr. Lloyd (Game Birds and Wildfowl of Sweden and Norway) figures a nearly-white female, which, when killed, had a brood of young ones with her; one of them being nearly full grown, and of the usual colour of the Capercaillie hen. A male variety in the Thunberg collection, at Upsala, has received the name of *Tetrao eremita.* Sterile females, which have assumed to a greater or less extent the plumage of the male, are often met with: indeed Mr. Collett, of Christiania, says that he finds them every winter, and one, obtained on the 18th October, 1872, exhibited so striking a resemblance to an old and fully-coloured male as to be with difficulty distinguished from one. The distinguishing characteristics were the beard-like feathers on the throat speckled with white, the dark bill, and the absence of the large white spot of the male bird on the tail, which was finely spotted with greyish-red.*

That this sterility is not always a consequence of old age, is proved by the fact that many of these females are young birds; but in all those dissected by Nilsson the ovarium was more or less diseased; and the older the female, the closer was the resemblance she bore to the male. A figure of a barren female of this description is given below from Nilsson.

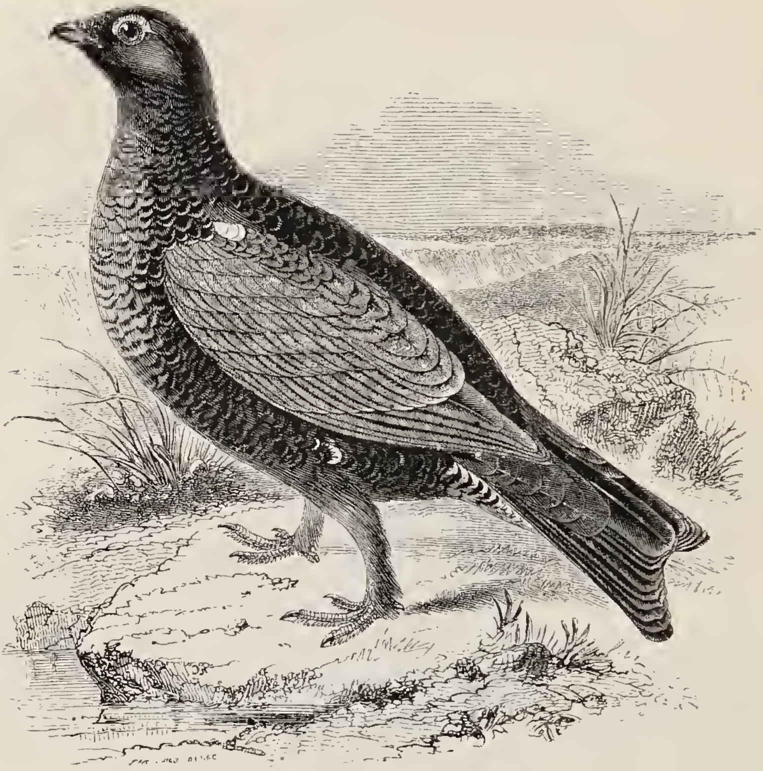


Like many gallinaceous birds, the Capercaillie in confinement will breed with other species, and the first result of the earliest importation to Braemar was the production of a hybrid between the sole surviving male and a common barndoor Hen. In Mr. Lloyd's 'Game Birds,' already cited,

* Ornithology of Northern Norway, p. 48.

is an amusing account of a male Capercaillie, which, having paired successfully with a Turkey-hen, deserted her for a white Goose, but was so scared by his reception that he never made any further advances to the Turkey or to any other hen bird. Allusion has already been made to the wild hybrid between the Capercaillie and the Black Grouse: a cross which is not uncommon in all countries inhabited by the two species, and is known in Scandinavia as the *Rakkelhane* or *Rakkelfogel.* This hybrid is generally, and some say invariably, produced between the female Capercaillie and the Black-cock, and Mr. Harvie-Brown considers that it probably results from the fact that the females of the Capercaillie start on their wanderings before the males, and, in the absence of their natural partners, mate with the handsome and amorous Black-cocks whose territory they have invaded. The male Capercaillies soon follow the females, so this hybridism rarely attains to serious proportions. As regards the paternity, however, the late M. Falk, whose arguments are given at considerable length in Mr. Lloyd's 'Game Birds,' held that many of these hybrids were the offspring of the females of the Black Grouse, and the younger male Capercaillies which had been debarred by the older and stronger birds from uniting with females of their own species. Under the former assumption, which has been maintained by Nilsson, Collett, and others, the name of *Tetrao urogallo-tetrix* has been given as expressive of the origin of this hybrid, and as a substitute for the inapplicable name *T. urogalloides.* From the erroneous belief that it was a distinct species, it had already been called *T. medius, T. intermedius,* &c.

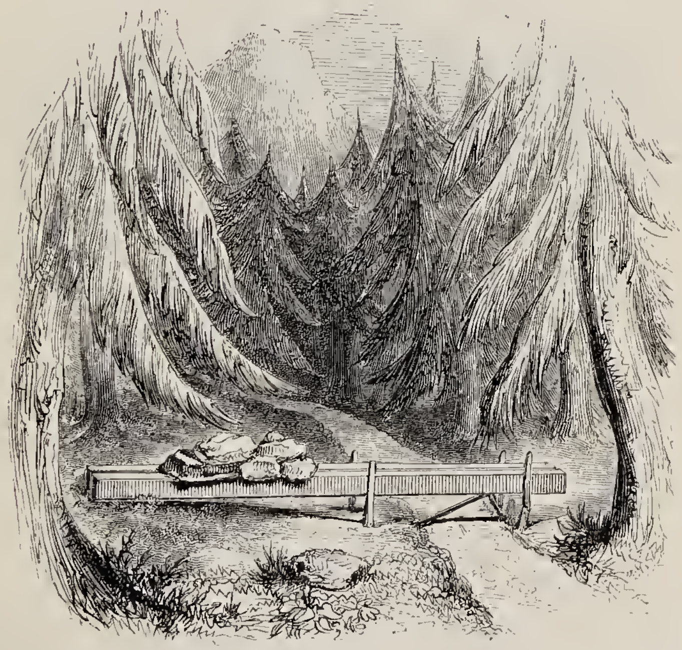
The male of this hybrid is a handsome black-billed bird, sometimes nearly as large as a young Capercaillie cock, and from six to seven pounds in weight; the shining feathers on the neck are of a rich Orleans-plum colour, and the outer feathers of the tail are longer than the others, giving it a forked appearance, although never to anything like the same extent as in the Black-cock. The figure of this bird on the next page is taken from a coloured illustration to Nilsson's



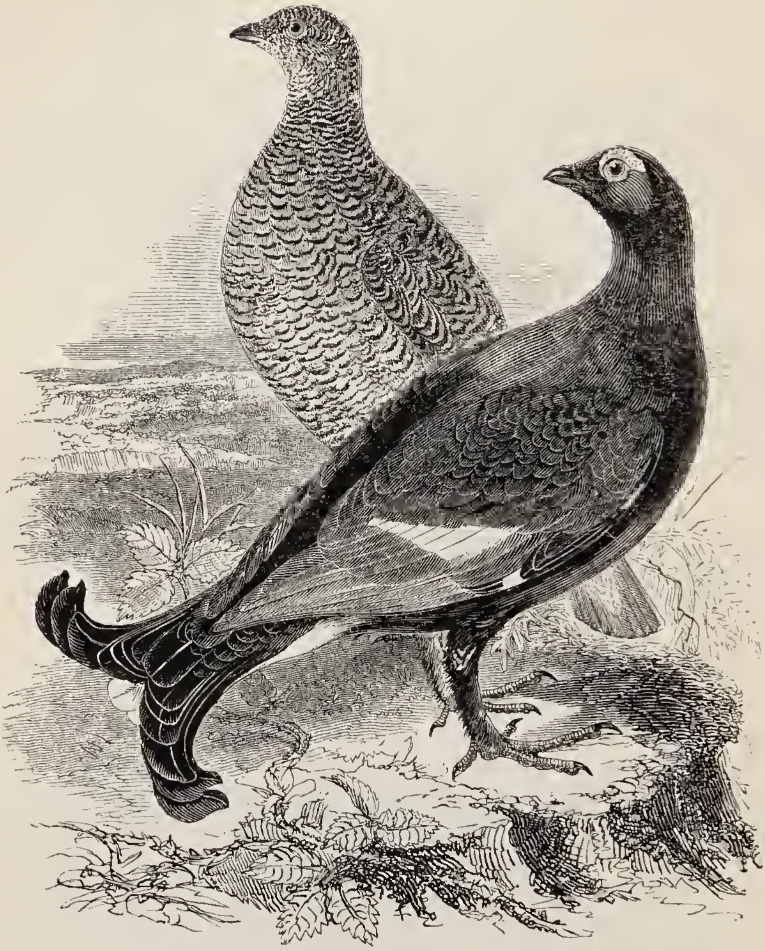
‘Skandinavisk Fauna.’ Females are either rarer, or, from their similarity to the hens of both species, they are overlooked; they may, however, be recognized by the shape of the tail, which is perfectly square at the end, whereas in the Capercaillie hen it is rounded, and in the Grey-hen it is slightly forked. The *Rakkelfogel* are not believed to breed amongst themselves, says Mr. Lloyd, but the males resort to the *Lek* of the Black-game and disperse the cocks; and at the *Lek* of the Capercaillie, they flit from tree to tree and disturb the *Spel*, for which reasons they are always shot as speedily as possible by Scandinavian sportsmen. In Scotland they have already made their appearance, and it is probable that they existed there in former times contemporaneously with the Capercaillie.

Full descriptions and illustrations of every way of shooting and snaring the Capercaillie will be found in Mr. Lloyd’s ‘Game Birds;’ but the following description of a trap used by the peasants in Norway is derived from Mr. Grant, who also contributed the drawing from which the vignette at the end is taken :—

Where the trees grow thickly on either side of a foot-path, two long pieces of wood are placed across it; one end of these rests on the ground, the other being raised a foot and a half, or somewhat more, from the surface, and supported by a piece communicating with a triangular twig, placed in the centre of the path, and so contrived that on being slightly touched the whole fabric falls: a few stones are usually placed upon the long pieces of wood to increase the rapidity of the drop, by the additional weight. Birds running along the foot-path attempt to pass beneath the barrier, strike the twig, and are killed by the fall of the trap.



GALLINÆ. *TETRAONIDÆ.*



TETRAO TETRIX, Linnæus.*

THE BLACK GROUSE.

Tetrao tetrix.

ALTHOUGH at the present day the word Grouse, when used alone, is applied in common parlance to the Red Grouse (*Lagopus scoticus*); yet it would appear from Professor

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* Syst. Nat. Ed. 12, i. p. 274 (1766).

Newton's researches that the earliest record of its employment is with reference to the present species. "It first seems to occur (*fide* O. Salusbury Brereton, *Archæologia*, iii. p. 157) as 'grows' in an ordinance for the regulation of the royal household dated 'apud Eltham, mens. Jan. 22, Hen. VIII.,' *i.e.*, 1531, and, considering the locality, must refer to Black game. It is found in an Act of Parliament i. Jac. I., cap. 27, § 2, *i.e.* 1603, and as reprinted in the *Statutes at Large*, stands as now commonly spelt, but by many writers or printers the final *e* is now omitted. In 1611 Cotgrave had 'Poule griesche. A Moore-henne; the henne of the *Grice* [in ed. 1673 'Griece'] or Mooregame (*Dictionarie of the French and English Tongues*, sub voce *Poule*). The most likely derivation seems to be from the old French word *Griesche*, *Greoche*, or *Griais* (meaning speckled, and cognate with *Griseus*, grisly or grey), which was applied to some kind of Partridge."* Members of this species are now generally known collectively as Black game, and in Devon and Somerset as Heath-poults; the sexes being distinguished as the Black-cock and the Grey-hen.

The increase of population, the enclosure of wastes, and the drainage of boggy lands, have combined to curtail the area over which the Black Grouse formerly roamed in the south of England, and neither Eltham—once a favourite resort of Plantagenet and Tudor sovereigns—nor any other part of Kent can now shew any indigenous birds. In Surrey—in consequence, it is said, of reintroduction early in the present century—Black Grouse are found about Leith Hill, and in the neighbourhood of Guildford; and also in Wolmer Forest, where the species had become extinct in the time of Gilbert White; but having been reintroduced after the planting of the woods by Sir Charles Taylor, then ranger of the forest, they throve exceedingly well. The parents of the present race came from Cumberland, and in 1872 an old man who brought the birds to Wolmer was still living at Liphook.† Descendants of these birds have strayed to the heathy portions of the neighbouring counties of Berkshire and Hampshire on the one side, and to the district of the St. Leonard's and Tilgate Forests in Sussex on the other. In the south-west of Hampshire, however, in the New Forest, they have never become extinct: they are found, although sparingly, in Wiltshire, and in suitable localities in Dorsetshire; becoming tolerably abundant again on the Quantocks and the Brendons in Somersetshire, and numerous where that county joins Devon on the wilds of Exmoor. They are also met with in some parts of South Devon, and, although by no means common, they breed on the eastern moors of Cornwall. In Glamorganshire they became extinct prior to 1820, but they are found in Brecon, Radnorshire and some other Welsh counties; in Shropshire; and in Staffordshire, especially about Cannock Chase, they were recently abundant. Rare, if not extinct, in Charnwood Forest in Leicestershire, they still inhabit Sherwood Forest in Nottinghamshire, north of which they are found,—although locally, and in some cases owing to introduction,—in every county in England. An isolated and decreasing colony exists in Norfolk on the wild heathy tracts about Bawsey, Dersingham, Sandringham, and Snettisham; and as Sir Thomas Browne (temp. Charles II.) says, "I have heard some have been seen about Lynn," it appears probable that the species is indigenous there. In Lincolnshire, according to Mr. Cordeaux, they were introduced some years ago on the wild district near Frodlingham on Trentside.

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* Encycl. Brit. Ed. 9, xi. p. 221, note.

† H. W. Feilden, 'The Field,' March 30th, 1872 (p. 286).

In Scotland, although less generally distributed than in former years, Black Grouse are found, more or less abundantly, on all the mountainous and hilly districts and on many isolated patches of upland heather and sheep-land. They are plentiful in many of the Inner Hebrides, especially on Mull; whilst in the northern portion of Islay, although it is bare of cover, they are, according to Mr. Elwes, rapidly increasing.[*] They have not as yet been successfully introduced in the Orkneys or the Shetland Islands. Thompson considers that there is no satisfactory evidence of the species having ever been indigenous in Ireland, and attempts at introduction made in Antrim, and recently by Colonel Cooper, of Markree Castle, Sligo, have resulted in failure.

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[*] R. Gray, 'Birds of the West of Scotland,' p. 231.

In Norway and Sweden the Black Grouse is widely distributed wherever there are woods and moorlands up to the limit of the birch forests in about 69° N. lat., and it even ascends the fells beyond the birch belt. Rare on the heaths of Denmark, and scarcely known in Holland and Belgium, except towards their southern and eastern frontiers, it becomes tolerably numerous in suitable districts of Germany, and is more or less abundant on both sides of the mountain ranges of Central Europe from the Alps to the Carpathians. A resident in the wooded portions of Lombardy and Liguria, it even occurs as a straggler in the Apennines down to the Modenese. In France it appears to be confined to the mountains on the eastern frontier, but Crespon seems inclined to believe in its occurrence in the Cevennes, which would tend to strengthen the hitherto unsupported statement made by Dr. Companyó that it is found in the Eastern Pyrenees: a district which differs in many important natural features from the Central and Western portions of that chain, from which it is not recorded. In Finland, the greater part of Russia, and even in Poland, it is generally distributed, extending as far as Sarepta on the Volga; but in the Caucasus it is unknown, its place being taken by a very distinct although closely allied species, named, after its discoverer, *Tetrao mlokosiewiczi*. The male of the latter is a smaller and more slender bird than the Black-cock, and its entire plumage is of a deep glossy black, as may be seen on reference to Mr. Dresser's fine plate in the 'Birds of Europe,' vol. vii. Beyond the Ural the Black Grouse stretches across Siberia with the limit of the forest growth to Mantchuria and Northern China, but precise details as to its southern distribution are as yet wanting. Siberian examples are more feathered about the legs than European ones.

The Black-cock is polygamous, and, like the Capercaillie, has his pairing-grounds, which are visited somewhat earlier in the season. The males assemble even before the first dawn of day, and utter a succession of notes which in calm weather can be heard at the distance of a mile or more. At this time it is popularly supposed in Scandinavia that they are deaf; but this is a mistake, although when combating, the cocks are more easily approached than at other times. As the old cocks alight, they begin to make love to the hens, which keep somewhat in the background amongst the bushes; they strut about with outstretched neck, trailing wings, and expanded tail, occasionally vaulting high in the air, and describing an irregular somersault, coming down with the head turned in the opposite direction. Desperate combats frequently ensue, and at times even a general *mêlée*. When the *lek* is over for the time, the birds separate: each cock accompanied by the hens which he has secured; and at the conclusion of the pairing-season the latter retire to their breeding-grounds. The females make a slight nest on the ground, frequently under shelter of some low thick bush, and deposit from six to ten eggs of a yellowish-white, spotted and speckled with orange-brown; measuring about 2 by 1·45 in. There is also a short *spel* in autumn, when the males again separate from the females and flock together.

Although to a certain extent arboreal in their habits, cover is by no means essential to Black Grouse during the whole of the year; but they must have water, and their favourite haunts, especially when young, are moist forest lands and swampy, rushy moors, where they feed freely upon the juicy brown seeds of a coarse thick rush. To the drainage and reclaiming of much of this kind of land, Mr. Harvie-Brown partially attributes the undoubted recent decrease in the number of Black Grouse in Scotland.* Ants' eggs and other insect food are favourites with very young birds. In spring, says Macgillivray, their food consists principally of twigs and catkins of alder, birch and willow; in summer, of tops of heather, *Vaccinium myrtillus*, and *Empetrum nigrum;* in autumn, of heath, crowberries, cranberries, blaeberries, and whortleberries; and in winter, of tops and buds of these plants, and of fir: they also make frequent excursions into the stubble fields in autumn, being especially partial to barley. Birds which had lived in woods during winter have been found to have their stomachs stuffed with the foliage of *Polypodium vulgare*, which was also taken by Macgillivray from the crop of a Pheasant. In severe weather in Scandinavia they are well known to burrow into the snow.

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* 'The Capercaillie in Scotland,' Chap. xii.

Mr. Lloyd says that the Black Grouse is easily domesticated, and if reared from a chick or taken young becomes even tamer than the Capercaillie; requiring similar treatment. As an illustration of the familiarity of the bird in the wild state, the following is taken from the 'Zoologist,' p. 4440:—"As Mr. S. W. Hurrel was crossing the hill between Carr-bridge and the Spey, on a fishing excursion, with some of his dogs following, one of them pointed, when a Greyhen offered to do battle in defence of her brood, and flapping her wings like fanners, she with heroic bravery actually beat her canine antagonist, and drove him crest-fallen away. Mr. Bass, M.P., and his friends, who have taken the shootings around Carr-bridge, are in the habit of giving presents to the herd-boys in the districts, in order to engage them to preserve the nests, and, if possible, guard them against external violence. One of the keepers lately accosted one of these herd-boys, and, in answer to several queries on the subject of nests, was told by the boy, that, in guarding the game from molestation, he had no difficulty except with one nest, which was situated in a place much frequented by the cattle, and which, he said, must have been destroyed unless by some means protected. 'But,' continued the boy, 'I have built a little house of stones and turf about it, and that will prevent the cattle getting at it.' 'But,' replied the keeper, 'you will certainly scare away the birds.' 'Oh no,' rejoined the boy, 'I have left a little door for the hen to get in and out at, and she sits on the eggs as usual;' which the keeper, on visiting the place, found to be true."

In the adult male, at the time of the *lek* or *spel*, the semilunar, scarlet, erectile patches of naked skin over each eye become inflated until they stand up firmly above the crown of the head, but shortly after death they collapse, and in autumn they are far less marked; the beak is black; the irides dark brown; the feathers of the head, back, wing-coverts and tail, black; those of the neck and rump metallic blue-black; the primary quill-feathers brownish-black, with white shafts; the secondaries and tertials black at the end, but white at the base, forming a conspicuous white bar below the ends of the great wing-coverts, which, with the lesser coverts, are black; the feathers of the spurious wing with white spots at the base; tail of eighteen black feathers, of which three, four, and sometimes five of those on each outside are elongated, and curve outwards; the others nearly equal in length, and square at the end; the chin, breast, belly, and flanks, black; under wing-coverts, axillary plume, and under tail-coverts, pure white; vent, thighs, and legs, mixed black and white; toes and claws blackish-brown.

The whole length is twenty-two inches. From the carpal joint to the end of the wing, ten inches and a half: the form of the wing rounded; the first quill-feather about as long as the seventh, the second about as long as the sixth, the fourth rather longer than the third or the fifth, and the longest in the wing.

The female of the Black Grouse, usually called the Grey-hen, has the beak dark brown, irides hazel; the general colour of the plumage pale chestnut-brown barred and freckled with black: the dark bars and spots larger, and most conspicuous on the breast, back, wings, and upper tail-coverts; the feathers of the breast edged with greyish-white, particularly in old birds and in those from northern latitudes; under tail-coverts nearly white; feathers on the legs pale mottled brown; toes and claws brown.

The whole length is seventeen to eighteen inches; from the carpal joint to the end of the wing, nine inches.

In the young in down a day or two old, the bill is yellowish-brown; the general colour is yellowish-buff, paler below: ruddier, with dark mottlings, above; a dark brown spot on the forehead, and a broad chestnut patch, with darker edges, on the crown. When partially fledged, the bill becomes darker, and the feathers on the back and wing-coverts have white tips and centres.

The first plumage of the young male is similar to that of the female, but by the beginning of October the female garb has been discarded; the tail is black, although but slightly forked, with a few mottlings on the upper coverts; dark feathers, only slightly mottled with brown or grey, cover both upper and under parts, and the white bars on the wings are thoroughly defined. The head already is glossy black, but the brown feathers still remaining about the neck give the bird a peculiar appearance, which is, however, soon lost. The mottlings on the wing-coverts and secondaries disappear with increasing age, and by the third year full plumage is assumed.

Examples of both sexes are sometimes found with an unusual amount of white about their plumage, and this is especially the case with females from northern and north-eastern localities. Males from Siberia shew more white than Western specimens, but beautiful examples with white-mottled breasts and wing-coverts may also, though rarely, be obtained in Scotland. Isabelle varieties of the female are also met with.

Barren Grey-hens sometimes assume the male plumage, and the collection of Mr. F. Bond contains some remarkably fine examples. One of these is nearly black below, with a few mottlings, and rich bluish-purple above; others shew little more than a tendency to a uniform dull colour, with white bars on the wing and metallic blue on the rump. The weight of an old Black-cock has been known to reach 4¼ lbs.: a young one weighs from 2½ to 3 lbs., and a Grey-hen from 2 to 2½ lbs.

Hybrids between the Black Grouse and the Capercaillie have been noticed when treating of the former species. Interbreeding has also taken place between the Black and the Red Grouse, and in many parts of this country both birds inhabit the same ground; but such a union happens more rarely with species which, like the Red Grouse, pair in their season, than with those which, like the Pheasant and the Capercaillie, do not pair. Macgillivray (British Birds, i. 162) has, however, mentioned three, describing in detail one bird supposed to have been thus produced, and which was sent by Lord Mostyn from Wales, for preservation, on the 8th of September, 1855, when a note was made of its appearance. The head, neck, breast, and all the under surface of the body, resembled the plumage of the young Red Grouse ; the back, wings, upper tail-coverts, and the tail-feathers, were as black as those parts in the Black Grouse ; the tail-feathers were elongated and forked, but being a young bird of the year, and killed thus early in the season, the most lateral of the tail-feathers had not begun to curve outwards ; the legs were feathered to the junction of the toes, but the toes were naked and pectinated, like those of the Black Grouse. Another was recorded in 'The Field' of March 15th, 1863, and a very handsome example, more like the Black-cock about the upper parts, was obtained by Mr. H. E. Dresser in Leadenhall Market, the 12th October, 1876.

In Scandinavia the Black Grouse occasionally mates with the Dal-Ripa or Willow-Grouse (*Lagopus albus*), the representative there of our Scotch Grouse ; the offspring being known as "Rypeorre" or "Riporre." A representation of one of these hybrids is given on the opposite page from Nilsson's 'Skandinavisk Fauna.'* A far rarer hybrid is the one between the Black and the Hazel Grouse (*Bonasa betulina*) described and exhibited by Mr. Dresser (P. Z. S., 1876, p. 345).

In this country the hybrids best known are those between the Black Grouse and the Pheasant. The

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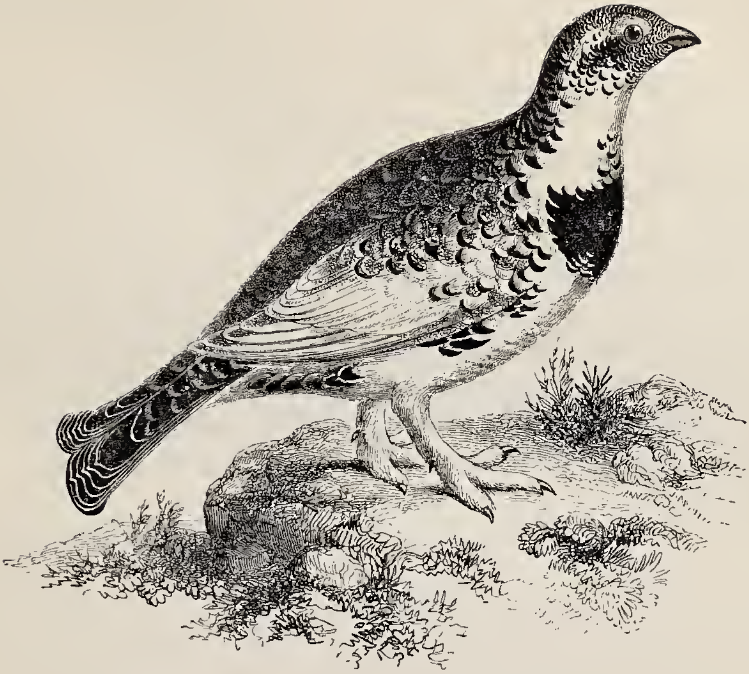
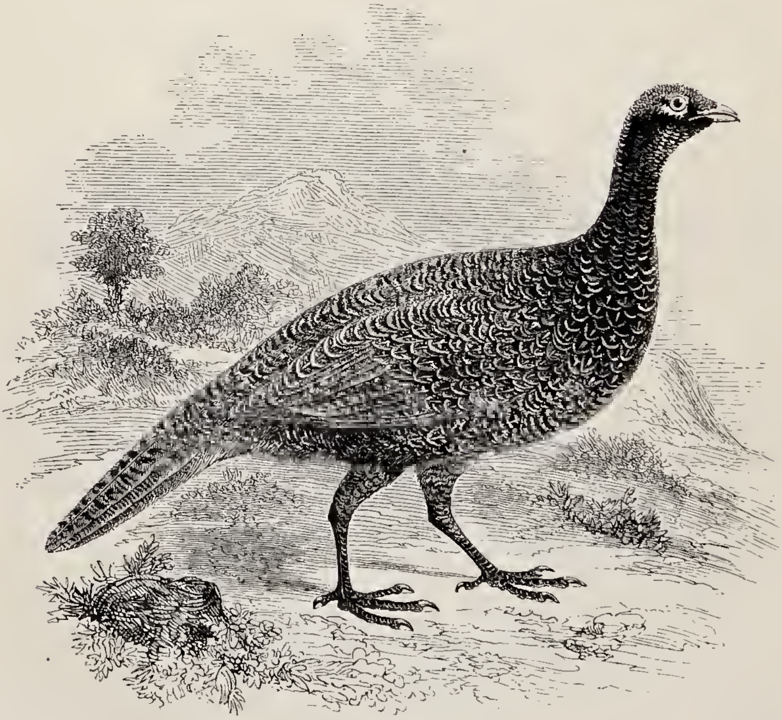
* Mr. Collett of Christiania maintains, in opposition to some other naturalists, that this hybrid is the result of a union between the male of *Lagopus albus* and the female of *Tetrao tetrix* ; and his arguments are given at great length in his 'Remarks on the Ornithology of Northern Norway,' published in the 'Forhandlinger Videnskabs-Selskabet i Christiania,' 1873, pp. 238–251, and partly reproduced in Mr. Dresser's 'Birds of Europe,' vii. pp. 213–216. The reader should bear in mind that whenever Mr. Collett uses our word 'Ptarmigan' in the above pages, he refers to the Willow-Grouse, and not to *Lagopus mutus*.



first on record is the bird noticed by Gilbert White, of Selborne, of which a coloured representation is given in some of the editions of his work. The subject being then new, the real character of that specimen was a matter of doubt, till more recent experience, and other examples, seemed to confirm its origin. In June, 1834, the late Mr. Sabine called the attention of the members present at a meeting of the Zoological Society to a specimen of a hybrid bird, between the common Pheasant and the Grey-hen, which was exhibited. Its legs were partially feathered; it bore on the shoulder a white spot, and its middle tail-feathers were lengthened. It was bred in Cornwall, and belonged to Sir William Call (P. Z. S., 1834, p. 52).

In 1835, the late Mr. T. C. Eyton, residing near Wellington, Shropshire, sent up for exhibition to the Zoological Society a hybrid bird between the cock Pheasant and the Grey-hen, with a note, as follows:—" For some years past, a single Grey-hen has been seen in the neighbourhood of the Merrington covers, belonging to Robert A. Slaney, Esq., but she was never observed to be accompanied by a Blackcock, or any other of her species. In November last a bird was shot on the manor adjoining Merrington, belonging to J. A. Lloyd, Esq., resembling the Black-game in some particulars, and the Pheasant in others. In December another bird was shot in the Merrington covers, resembling the former, but smaller; this, which is a female, is now in my collection, beautifully preserved by M. Shaw, of Shrewsbury" (P. Z. S., 1835, p. 62). The figure given below represents this bird, Mr. Eyton having allowed the use of his specimen for that purpose. He further remarks, that he had also seen another specimen, killed near Corwen, in Merionethshire, and then in the collection of Sir Rowland Hill, Bart.

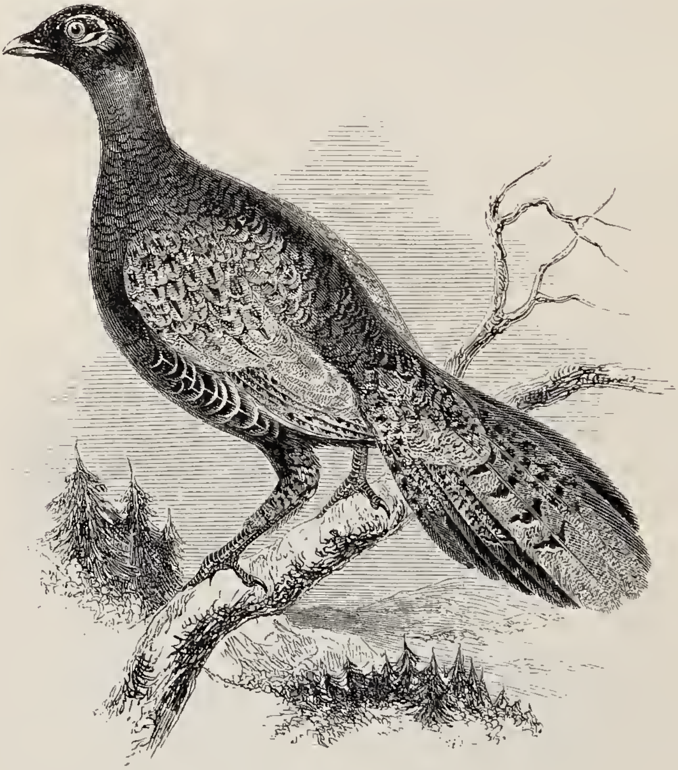
In December, 1837, Mr. John Leadbeater exhibited at

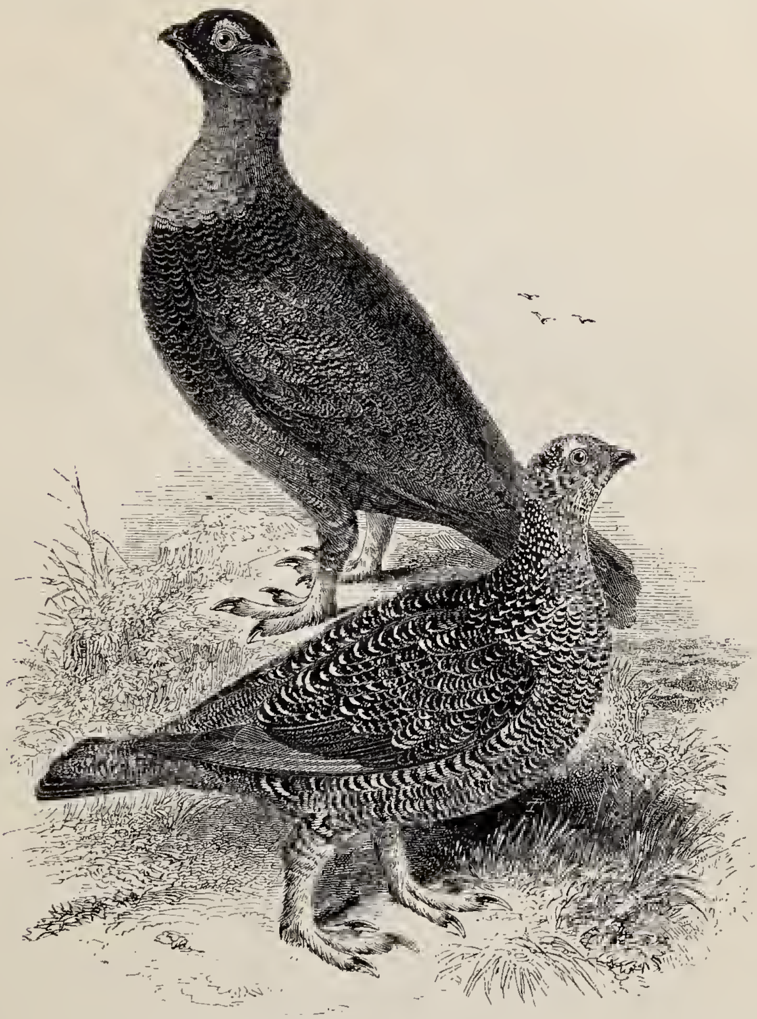


the Zoological Society a male hybrid between the Pheasant and Black Grouse. It was observed that this was the third specimen which had been sent to the Society for exhibition within a comparatively short space of time. The first bird, from Cornwall, was more of a Grouse in appearance than a Pheasant; the second, Mr. Eyton's bird, from Shropshire, was more Pheasant-like; but the present bird was decidedly intermediate, exhibiting characters belonging to both. The head, neck and breast, were of a rich dark maroon colour, the feathers on the breast shewing the darker crescentic tips; the upper part of the tarsi were covered with feathers; the back and wings mottled blackish-grey, like that of a young Black-cock after his first moult, but with some indications of brown; the feathers of the tail rather short, but straight, pointed, graduated, and Pheasant-like. It was remarked that this bird more closely resembled the hybrid figured by White than either of the specimens previously exhibited. This bird was understood to have been killed near Alnwick, and it is now by the liberality of the Duke of Northumberland deposited in the British Museum.

Dr. Edward Moore, in his 'Notes on the Birds of Devonshire,' published in the 'Magazine of Natural History' for the year 1837, says, that a hybrid of this kind was shot at Whidey, near Plymouth, by the Rev. Mr. Morshead. A male Pheasant, a female Grouse, and one young, had been observed in company for some time by the keeper. Mr. Morshead shot the Pheasant, and, in a few days, the young hybrid; but the Grouse escaped. The young bird bears the marks of both parents; but the most prominent characters are those of the Grouse. The space above the eye, however, is not bare, as in the Grouse, but entirely feathered, as in the Pheasant; the whole of the neck is covered with black feathers, somewhat mottled; the tail is not forked, but fan-shaped, and half as long as that of the Pheasant; the tarsi are bare, as in the Pheasant; the colour is generally, except the neck, that of the Pheasant; but it has the white spot on the shoulders, as in the Grouse.

Another example, now figured from a coloured drawing supplied by the late Mr. Selby, of Twizell House, was shot early in December, 1839, in a large wood a few miles to the east of Fenton. Of late years other instances have been recorded, one of the most recent being described by Mr. J. Gatcombe (Zool. 1879, p. 60). Mr. Lloyd says that it is on record that a Black-cock, confined in a coop with a domestic hen, paired with her, the result being seven hybrids, all females, and these subsequently proved good "laying hens."





LAGOPUS SCOTICUS (Latham*).

THE RED GROUSE.

Lagopus scoticus.

LAGOPUS, *Brisson*†.—Bill very short, clothed at the base with feathers ; the upper mandible convex, and bent down at the point. Nostrils basal, lateral, partly closed by an arched membrane, and nearly hidden by the small closely-set feathers at the base of the bill. Eyebrows naked, as in the genus *Tetrao.*

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* *Tetrao scoticus,* Latham, Ind. Orn., ii. p. 641 (1790).

† Ornithologie, i. pp. 181, 216 (1760).

Wings short, concave, with the third and fourth feathers the longest. Tail of sixteen feathers, generally square at the end. Tarsi and toes completely feathered; hind toe very short, and barely touching the ground with the tip of the nail. Nails long, and nearly straight.

This handsome species is the British representative of the Willow-Grouse (*Lagopus albus*), which ranges from Norway across the entire continents of Europe, Asia, and North America. There can be little question that both species are sprung from a common stock, and that our bird is an example of an insular form which is found nowhere else in a natural state.* It is the only one of the genus *Lagopus* which does not turn white in winter, and it differs slightly from its nearest ally in its summer dress, in its call-note, and in some of its habits; but no structural differences between the two species have as yet been discovered. The remains of what may fairly be considered as the ancestor of these two forms have been found in the bone-caves of the south of France and also in Germany; and the Editor possesses an example of the Willow-Grouse assuming the summer garb, which was obtained in May as far south as the neighbourhood of Tiflis, in the Caucasus. The Red Grouse is probably an isolated descendant which has lost the power of turning white with the passing away of the necessity for doing so for the purposes of assimilation.

In Scotland, whence its specific name is derived, it is generally distributed over all the moors from the highest point where the ling (*Calluna*) and the heath (*Erica*) flourish, down to the coast-line. It is also found on Lewis, Harris, North and South Uist, Barra, and some of the smaller islands of the Outer Hebrides, and is tolerably abundant in Islay, Skye, Rum, and Jura, but is scarce in Mull. Remarkably fine birds are produced in the Orkneys, although not in large numbers; but in the not far distant Shetlands it is not indigenous, and the few introduced birds have failed to maintain themselves there. The low sandy heaths of the eastern portions of Scotland are less suitable to its tastes than the north and west, but there is not a county (unless Clackmannan prove an exception) which cannot claim the Red Grouse as an inhabitant. Across the border it is found on the moors of all the northern counties, especially on those of Yorkshire and Derbyshire, down the backbone of England as far as the Trent, particularly between 1,000 and 1,500 feet of elevation; westwards it occurs in Lancashire, Cheshire, Staffordshire, Shropshire, and on most of the Welsh moors down to Glamorgan. Beyond these lines the Red Grouse, although introduced on the heaths of Surrey and elsewhere, has never succeeded in maintaining itself, and Montagu records with surprise the occurrence of a straggler taken alive near Weohampton, in Wiltshire, in the winter of 1794.

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* About fourteen years ago Mr. Oscar Dickson successfully introduced this species into the district of Gottenberg, Southern Sweden, corresponding in latitude with Aberdeen.

On the moorlands and peat-bogs of Ireland it is generally distributed, although, from want of preservation, not in such abundance as in Scotland and the north of England.

The Red Grouse pair very early in spring, and the female soon goes to nest: this is formed of the stems of ling and grass, with occasionally a very few feathers: these materials being slightly arranged in a depression on the ground, under shelter of a tuft of heather. Daniel, in his 'Rural Sports,' says that "on the 5th of March, 1794, the gamekeeper of Mr. Lister (afterwards Lord Ribblesdale), of Gisburne Park, discovered on the manor of Twitten, near Pendle Hill, a brood of Red Grouse, seemingly about ten days old, and which could fly about as many yards at a time; this was an occurrence never known to have happened before so early in the year."

Thompson (Birds of Ireland, ii. p. 49) mentions a nest containing eleven eggs on the Belfast Mountains on 17th March. A farmer in burning ling off Shap Fell, burnt over a nest containing fifteen eggs on the 25th of March, 1835. The eggs are from eight to fourteen or fifteen in number, of a reddish-white ground colour, nearly covered with blotches and spots of umber brown: measuring about 1·75 by 1·2 in. The female sits very close; and Mr.

Salmon mentions that one allowed him to take her off her eggs. The cock bird does not share the duties of incubation, but while the hen is sitting he is generally not far off, and at the approach of danger he utters his warning *kok, kok, kok.* He is also in the habit of sitting on a hillock or "knowe," and crowing at dawn, especially on clear frosty mornings: the cry is peculiar, and not easily described, that of the female being a strange nasal croak. The young brood leave the nest soon after they are freed from the shell, and are attended to by both the parent birds, under whose example they learn to feed on the various vegetable substances by which they are surrounded. The extreme ends of the common ling and fine-leaved heather, with the leaves and berries of the black and red wortle, and crowberry, and occasionally oats, when grown at the moor side, are the portions and kinds of food most frequently found in their crops.

The variation in the plumage of the Red Grouse is considerable, especially in the feathers of the underparts; and those who have had opportunities of examining many examples, can give a good guess at the localities from which they have come. Thus birds from the Hebrides and Wigtonshire are said to be smaller and lighter in colour than those from more eastern moors; the Perthshire Grouse are smaller and darker than those of Argyllshire, whilst in Lanark, Renfrew and the Border counties they are as light-coloured as Partridges.* The Welsh birds are said to be large in size and light in colour; those from the north of England are more rufous; those from Ireland are much lighter, with a yellowish-red tinge in the plumage, and browner legs. This variation is principally noticeable in the underparts, and may be partially attributable to age, but it has been generally ascribed to a tendency to assimilate with the ground they frequent. Mr. E. T. Buckley, however (P. Z. S. 1882, pp. 112–116), says that he has killed dark birds on light-coloured ground, and that, considering the partially migratory habits of the Grouse, which must descend from the higher to the lower grounds as winter advances, it is scarcely possible to suppose that each bird could select the surroundings suitable to its own plumage. Nor is the principal variation in the back—although that is the portion which requires protective assimilation—but in the underparts, which are concealed when the birds squat; and these variations are therefore considered to be instances of individual difference or polymorphism.

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* Colquhoun, 'The Moor and the Loch,' ed. 3, p. 112.

Some birds bred on high ground shew a tendency to white underparts in winter, and, although rare, instances are not unknown of a change similar to that observed in the Willow-Grouse. Mr. John Marshall, of Belmont, Taunton, has two birds said to have been shot in Perthshire, in which the quill-feathers are white with black shafts; the tail black, tipped with white; the tail-coverts pure white; and the body white, sprinkled with dark feathers about the head and neck. A male specimen in the collection formed by Messrs. Salvin and Godman, and now in the British Museum, obtained on the Island of Lewis in October, has a considerable amount of white on the throat. Varieties of a greyish-buff are sometimes obtained, and on one of these, purchased from a dealer, the late Mr. G. R. Gray conferred the name of *Lagopus persicus*, under the impression that it came from some place in Persia. This specimen is figured in Gray and Mitchell's 'Genera of Birds,' vol. iii. p. 517, pl. cxxxiii., and in Mr. D. G. Elliott's Monograph of the *Tetraonidæ*, but there can scarcely be a doubt that the locality was assigned in error. A similar variety has been obtained in co. Mayo (A. G. More, Zool. 1882, p. 147); and examples of a cream colour have been recorded by Selby (Ill. Brit. Orn. i. p. 249) from the moors of Blanchland in the county of Durham, but from the anxiety of sportsmen to procure specimens, these birds were not allowed to increase.

Red Grouse also vary much in weight in different districts and according to the time of year, being at their best both as regard weight and plumage in November. A cock Grouse generally weighs about 1½ and a hen about 1¼ lbs., but many birds are on record up to 2 lbs. The weight of the heaviest birds shot between 1874–1881 on Rousay in the

Orkneys, where disease is unknown, and the winters are open, was nearly 30 ounces. Unlike its Scandinavian congener the Willow-Grouse, the Red Grouse seldom perches in trees. Mr. H. Seebohm has only once seen one alight in a wood after a flight, remaining for a short time with its wings half expanded, and apparently not at all at its ease; but Mr. L. Lloyd cites (Game Birds of Sweden, p. 126) an instance of several birds, unmistakably of this species, being observed in an ash-tree on the edge of a moor in Ayrshire; and Sir John Crewe states (Gould's Birds of Great Britain) that on one occasion not less than five brace were observed in an old thorn-tree; the autumn being the season when this habit is most noticed, and the larch the tree preferred. They are frequently seen to sit on dykes and stone-walls.

The Red Grouse, like the Capercaillie and the Black Grouse, will live and breed in confinement, and some have become remarkably tame. Daniel mentions (Rural Sports) that they "had been known to breed in the menagerie of the late Duchess Dowager of Portland, and that this was in some measure effected by her Grace's causing fresh pots of ling or heath to be placed in the menagerie almost every day. At Mr. Grierson's, Rathfarnham House, county of Dublin, in the season of 1802, a brace of Grouse, which had been kept for three years, hatched a brood of young ones. In 1809, Mr. William Routledge, of Oakshaw, in Bewcastle, Cumberland, had in his possession a pair of Red Grouse completely domesticated, and which had so far forgotten their natural food as to prefer corn and crumbs of bread to the tops and seeds of heath. The hen laid twelve eggs, but from some cause was not suffered to hatch them; or, in all probability, the young brood would have been equally as tame as their parents." In 1811, a pair of Red Grouse bred in the aviary at Knowsley; the female laid ten eggs, and hatched out eight young birds; but these, from some unknown cause, did not live many days. In 1866 a brood was hatched in the gaol at Omagh, and other instances are on record.

Owing to preservation, and the reduction or extirpation of their natural enemies, Red Grouse had enormously increased prior to the time when the Grouse-disease shewed itself, and made terrible ravages on some of the moors which had previously been amongst the best stocked. It has been ascribed to various causes, most of which have in all probability had a share in contributing to its development, and each of which, to the exclusion of all others, has found its violent partisans. The immediate cause in specimens examined by Dr. Spencer Cobbold would seem to have been the presence in extraordinary numbers of two sets of entozoic parasites, both flat and round, the existence of which in small numbers may be compatible with health, whilst emaciation and death result from their supremacy. Bad weather, and the nipping of the young shoots of the heather by a late frost, or its injudicious burning, also tend to weaken the systems of the birds.*

It is not desirable to enter into details respecting Grouse-shooting, but as the number of this species bagged in a single day exceeds that of any other game-bird, a few facts may be given. The largest bag on record was made by Lord Walsingham at Blubberhouses in Yorkshire, on the 28th August, 1872, when he killed 842 Grouse in one day to his own gun, and under somewhat unfavourable circumstances. In the same year, on the Wemmergill Moors, in the North Riding of Yorkshire, Mr. F. A. Milbank, M.P., in six days, and with an average of six companions, killed 3,983½ brace, or nearly 8,000 birds. The largest bag over dogs was made by the Maharajah Duleep Singh at Grandtully, Perthshire, on the 12th August, 1871, when 220 brace of fairly-grown Grouse and no "cheepers" were shot; and on the 14th, 110 brace of Grouse over one brace of dogs in six hours.†

A male bird of the year, killed in December, had the beak black; the irides hazel, with a crescentic patch of vermilion red skin over the eye, fringed at its upper free edge; head and neck reddish-brown, but more rufous than any other part of the bird; back, wing, and tail-coverts, chestnut-brown, barred transversely and speckled with black; distributed among the plumage were several feathers in which the ground colour was of a bright yellowish-brown; all the quill-feathers dark umber-brown; the secondaries and the tertials edged on the outside, and freckled with lighter brown; the tail of sixteen feathers: the seven on each outside dark umber-brown; the four middle feathers chestnut-brown, varied with black. On the breast the plumage was darker than on the sides, almost black, and tipped with white; the chestnut-brown feathers on the sides, flanks, belly, vent, and under tail-coverts, tipped with white; legs and toes covered with short greyish-white feathers; claws long, bluish-horn colour at the base, nearly white at the end. In the breeding-season the red skin over the eye is partially erectile, but droops at the edges and does not stand up firmly like the comb of the Black-cock.

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* *Cf.* Harvie-Brown, Zool. 1882, p. 401.

† Rural Almanac, 1881, p. 21.

The whole length is sixteen inches. From the carpal joint to the end of the wing, eight inches and three-eighths: the first quill-feather shorter than the sixth, but longer than the seventh; the second shorter than the fifth, but longer than the sixth; the third and fourth nearly equal in length, and the longest in the wing.

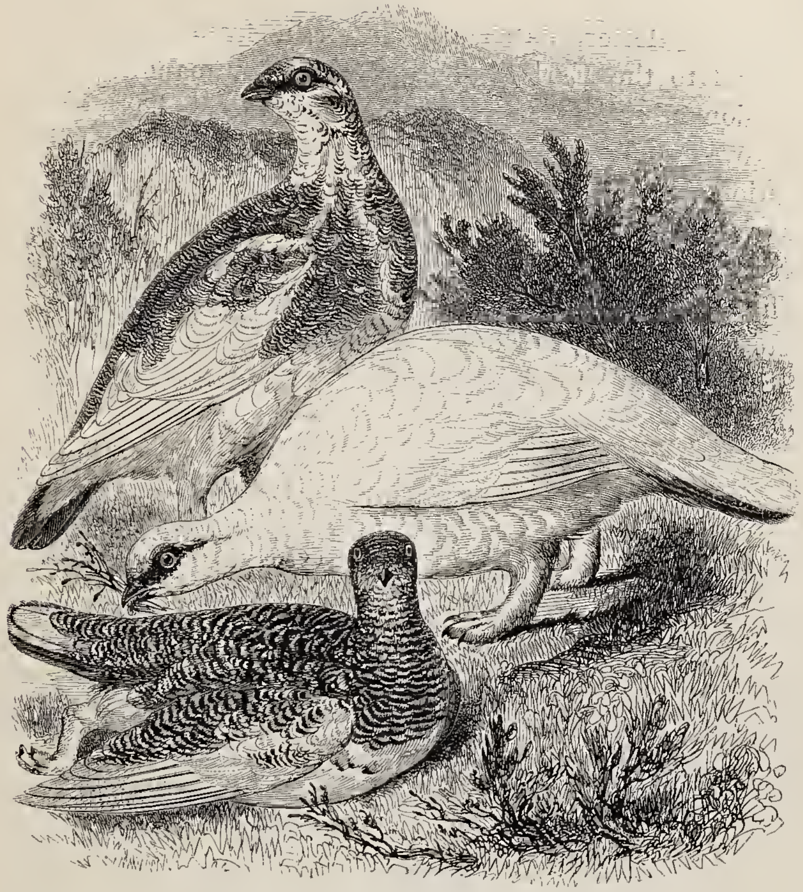
The old male in summer has many of the body feathers tipped with yellow, and the red colour is of a lighter tint.

The female is rather smaller than the male; the patch of red skin over the eye is also smaller; the red and brown tints of the feathers are lighter in colour, and give a more variegated appearance to the plumage generally. In her summer plumage all the feathers of the head and upper part of the neck are yellowish-chestnut, with a few black spots: those of the lower neck, breast, back, wing, and tail-coverts, and middle tail-feathers, transversely barred with black, and tipped with yellow; the long feathers on the sides and flanks also barred across with black and yellow, very much resembling the feathers borne on the same parts at the same season by the female Ptarmigan, shewing its affinity to that bird; and some authors have called our Red Grouse, the Red Grouse Ptarmigan, the Red Ptarmigan, and the Brown Ptarmigan.

In the young in down of a day or two old, are yellowish-buff banded with brown above, and yellowish-brown below; darker on the breast; a dark brown streak runs from the base of the bill to the centre of the crown, where it widens out into a broad ruddy-brown patch with darker margin. With increasing age the down becomes duller; rufous-brown feathers with darker bars appear on the side of the breast and flanks; the feathers of the wing-coverts and back are rich rufous with black centres tipped with black and white; the quill-feathers dull brown, with tawny mottlings.

The young of both sexes resemble the adult female, but by the middle of winter, when the first moult is completed, the young males are very similar to the old ones, excepting that the head and neck are barred and spotted.

Not being polygamous, it does not often hybridize with other species. The rare instances of its having done so with the Black Grouse have already been noticed. The following are the remarks made by Professor Newton (P. Z. S. 1878, p. 793) on exhibiting a supposed hybrid between the Red Grouse and the Ptarmigan (*L. mutus*):—"This remarkable specimen was lately given to me for the museum of the University of Cambridge, by Captain Houston of Kintradwell, in Sutherland, having been shot there out of a covey of Grouse on the 1st of Sept. 1878. As will be seen, it bears some considerable resemblance, above, to a hen Ptarmigan in summer plumage, but its general appearance is much darker. Beneath, there is a greater resemblance to the young of the Red Grouse; and the primaries are much as in that bird, being, however, partially edged with white to a much greater extent than is commonly found in the latter. I have shewn the skin to several ornithological friends, none of whom have been able to offer any other suggestion concerning it than that originally made by the donor, namely, that it is a hybrid between the two species named; and in confirmation thereof, Captain Houston told me that the part of his ground on which it was shot is close to a locality frequented by the Ptarmigan. Without having made an exhaustive search, I may say that I am not aware of any record of such a hybrid as this is supposed to be, though information received from several quarters induces me to believe that other examples have before now occurred; and my chief object in exhibiting the present specimen is to call attention to the subject."



Lagopus mutus (Montin*).

THE PTARMIGAN.

Lagopus mutus.

The Ptarmigan is the smallest in size of the British Grouse; and, so far as regards these islands, it is at the present day confined to Scotland, beyond which it has probably not been found within the historic period. Its

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[*] *Tetrao mutus,* Montin, Physiographiska Sälskapets Handl., p. 155 (Stockholm, 1776). The essential portion of this rare work is in the library of the Linnean Society.

name, derived, with a slight and inexplicable modification, from the Gaelic word *Tarmachan*, occurs as far back as 1617, in a letter, dated at Whitehall, from James I. of England to the Earl of Tullibardine, commanding that a provision of "Capercaillies and *termigantis*" be made for the royal sustenance between Durham and Berwick. As mentioned when treating of the Capercaillie (p. 46), Taylor, the water-poet, speaks of "termagants" in 1618, and, to judge by old Acts of Parliament, the latter seems to have been the usual Lowland form of spelling the name.

Respecting its distribution, Mr. Harvie-Brown says that in Sutherlandshire it especially frequents the stony mountains of Assynt, on the ridge of Ben Chaorin (commonly called Harran) and the heights and corries of Glashven, Ben Mhor, and Braebag, being less numerous on the curiously-shaped and isolated peaks of Quinaig, Canishp, Soulbhein (the "Sugar-loaf"), Coul Mhor, and Coul Beg, lying nearer the sea. In Ross-shire it is abundant on Ben Wyvis in the east, and on the range of Ben Deraig in the west, but again becomes scarcer towards the coast. Southward, through Ross-shire and Inverness-shire, in all suitable localities, it is met with abundantly, preferring, as a rule, the larger masses of mountain land to the isolated peaks. In Aberdeenshire, on Lochnagar and Ben Muich-dhu, it is tolerably numerous, although comparatively scarce on the western mountains of the same range, owing to the summits being less stony, deeply covered with moss, and not bearing mountain-berries in such quantities. In Skye it is found among the Cuchullin Hills, but not in great numbers; nor is it abundant in Harris or Lewis. In Inverness-shire the Editor observed a covey of nine birds on Ben Nevis in August, 1879. Southwards, through Perthshire, a fair number of Ptarmigan may be met with in certain localities; and Mr. James Lumsden, of Arden, states that, although in decreasing numbers, birds are still to be found breeding on Ben Lomond and in its vicinity. In Arran the species became nearly, if not quite, extinct about the year 1856; but in 1867 a few young birds were introduced from the north of Scotland, and their descendants still maintain a footing on Goatfell and Ben Noush. There appears to be no satisfactory evidence that this species ever occurred in the Orkneys, or in the Shetland Islands. It is found in Jura, and even on Islay, within sight of the coast of Ireland; but although many of the northern summits of the sister island are of considerable elevation, and similar in their character to those frequented by the Ptarmigan elsewhere, the species has never been known in Ireland even as a visitant.

The alleged former existence of the Ptarmigan on the mountains of Cumberland and Westmorland, and also in Wales, has been carefully investigated by Mr. A. G. More (Zoologist, 1881, pp. 44–47). It appears that Pennant, in his 'British Zoology,' Ed. 4 (1766), stated that "a few still inhabit the lofty hills near Keswick," to which Latham (1783) added the words "as well as in Wales,"—a locality which Pennant, although a Welshman, had nowhere mentioned. Dr. Heysham, in Hutchinson's 'History of Cumberland' (1794), quoted Pennant, without adding a particle of independent evidence, and later writers have merely amplified or paraphrased these statements. Mr. More has, however, learnt from Capt. W. K. Dover, residing at Keswick, that, although he has not succeeded in finding any tradition of the former existence of the Ptarmigan in the Lake district, yet there is a highly white-mottled variety of the Red Grouse found upon Skiddaw, and also on Shap Fells, in Westmorland; the latter being so white that two Scotch gamekeepers who saw them called them Ptarmigan. It is easy to understand that more than a century ago, when statements were less critically examined, and the Ptarmigan was only just known to be a British bird, any "white-mottled" Grouse seen on the mountains would be assumed to be the alpine species.

In Scandinavia, the Ptarmigan is resident in the Lofoden Islands, and on the Fells above the limits of the tree-growth, as far as the Nore-fjeld, in 58° 40′ N. lat., from whence it descends in small numbers to the western districts. Stretching across the northern portions of Finland, it is found on the mountains which attain an elevation of about 3,000 feet in the vicinity of the Imandra Lake on the Koła Peninsula. Hoffman* found it breeding on the high ground near the source of the Petchora in lat. 62° N., and obtained five specimens between lat. 61° and 66° N. In Arctic Siberia, Middendorf found a species of Ptarmigan occupying the generally flat northern portion of Siberia from 66° N. in winter, up to 71° N. in summer, as far east as the Taimyr Peninsula, and, whilst calling it *L. mutus,* he expressed surprise at finding it so similar to *L. rupestris.* It was subsequently suggested by Professor Newton that the examples of Ptarmigan obtained by Mr. H. Seebohm in 71½° N. lat. on the Yenesei, might actually belong to the latter: a view which comparison appears to have confirmed. *Lagopus rupestris,* the Rock-Ptarmigan of authors,† is a form which in all plumages except the white garb of winter, is browner than *L. mutus,* and which also inhabits lower and more level ground.‡ Its range was already known to reach right across the northern portions of America from the shores of Behring's Straits to Newfoundland, Greenland, and also to Iceland; but its presence in Arctic Siberia from Behring's Straits on the east to the Yenesei in the west, and probably further, coupled with the fact that it does not enter Europe, points to a barrier caused by important physical changes on the eastern side of the Ural. It now appears probable that the Ptarmigan recorded by Messrs. Blakiston and Pryer, as found in Northern Japan (Ibis, 1878, p. 226), and more recently in the Kurile Islands, may also be *L. rupestris.* On the other hand, the birds found by Radde on the Sochondo, at from 7,500 to 8,000 feet altitude, and those observed by Dybowski on the Sayansk mountains to the south-west of Lake Baikal were probably our *L. mutus*, which Dr. O. Finsch also obtained in the Altai range at an elevation of 6,000 feet.

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* 'Der Nördliche Ural, Wirbelthiere,' p. 68.

† H. Seebohm, 'Ibis,' 1879, p. 148.

‡ Selby (Rep. Brit. Ass. 1834, p. 611) recorded *L. rupestris* as having been killed on the Benmore ridge in Sutherlandshire; supposing, no doubt, that the orange-yellow dress, which is now well known to be assumed in summer by the female of *L. mutus,* was peculiar to the former species; and not being aware that Ptarmigan from the higher ground are smaller than those from lower elevations. (*Cf.* J. A. Harvie-Brown, Pr. Nat. Hist. Soc. Glasgow, 1875, p. 107.)

In Central Europe the Ptarmigan is found throughout the higher regions of Switzerland, and on the French and Italian slopes of the Alps; also in smaller numbers in Tyrol, Styria, and even as far as the edge of the Black Forest. It is tolerably abundant on the upper portions of the Pyrenees; and Lord Lilford has been informed on good authority that it occurs in the mountains of the Asturias and of Leon.

Ptarmigan pair early in spring, breeding in Scotland in the month of May; the nest, which is difficult to find, being a mere cup scraped in the turf, and sparingly lined with grasses and feathers. The eggs, of a yellowish-white blotched and spotted with dark brown, are, as a rule, of a somewhat lighter ground-colour than those of the Red Grouse, and of smaller size, measuring about 1·7 by 1·1 in., and are from eight to ten in number.

The young run about immediately on leaving the shell, and are expert at concealing themselves even on the barest places; whilst the hen bird resorts to the usual devices to divert attention. In wet or stormy seasons the various families associate or pack by the beginning of August, but otherwise not till winter, when as many as fifty have been seen together.

Ptarmigan are scarcer on the extreme summits of the mountains than at a lower elevation, and those which are shot on the "barrens," or level deserts of stones in the higher situations, are found to be considerably smaller-sized birds. Macgillivray observes, that "these beautiful birds, while feeding, run and walk among the weather-beaten and lichen-crested fragments of rock, from which it is very difficult to distinguish them when they remain motionless, as they invariably do should a person be in sight. Indeed, unless you are directed to a particular spot by their strange low croaking cry, you may pass through a flock of Ptarmigans without observing a single individual, although some of them may not be ten yards distant. When squatted, however, they utter no sound, their object being to conceal themselves; and if you discover the one from which the cry has proceeded, you generally find him on the top of a stone, ready to spring off the moment you show an indication of hostility. If you throw a stone at him, he rises, utters his call, and is immediately joined by all the individuals around, which, to your surprise, if it be your first rencontre, you see spring up one by one from the bare ground. They generally fly off in a loose body, with a direct and moderately rapid flight, resembling, but lighter than, that of the Red Grouse, and settle on a distant part of the mountain, or betake themselves to one of the neighbouring summits, perhaps more than a mile distant." Their food consists of fresh green twigs of *Calluna vulgaris*, *Vaccinium myrtillus*, and *Empetrum nigrum*, and other plants with berries in autumn: for the most part the same as that of the Red Grouse. Like that species, they suffer from disease in Scotland.

Ptarmigan are only kept alive in captivity with great difficulty. Dr. A. Girtanner (Zoologische Garten, 1880, pp. 71–82) gives a long account of his repeated failures with both old and young birds; but at last he succeeded by placing the latter with a captive Rock-Partridge (*Caccabis saxatilis*), by whose example they learned to feed, and all lived together in apparent contentment.

An adult male shot in Ross-shire on 13th May has the bill blackish-horn colour; over the eye an erectile red skin; the lores black; the head and neck of a mottled brown with some new black-centred feathers appearing on the crown and mantle; back and upper tail-coverts ochreous-grey, the centre ones longer than the tail-feathers; tail-feathers blackish, tipped with white;* primary quill-feathers white, with dark shafts; secondaries and wing-coverts white, with a few mottled brown feathers appearing; chin white; throat mottled brown and white; breast dark mottled brown; flanks yellowish-brown; abdomen and under tail-coverts white; legs and feet greyish-white. In a Perthshire specimen, killed June 2nd, the short mottled feathers of the head shewed abraded white tips with dark bases; the larger feathers of the neck and breast had dark bases, followed by a bar of white edged with buff, and terminating with black tips undergoing abrasion; back mottled with black, grey, and buff. In very old males, and especially in examples from Scandinavia, a much larger proportion of the feathers on the upper parts and breast are often of very dark colour.

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* Specimens killed in spring frequently have the two long central tail-coverts of a pure white, the remainder of the winter plumage; and these might easily be mistaken for the middle feathers of the tail itself. In autumn these feathers are renewed, and in immature birds the central portions are lead-coloured.

The female, which is slightly smaller than the male, has the head and upper parts of a rufous buff, broadly mottled with black, and slightly tipped with grey; the quill-feathers white, with more dark markings about the shafts than in the male; the tail-feathers blackish, but freckled with grey on the outer web, especially in Pyrenean examples; breast and flanks buff, mottled with black and grey; lower breast and belly mottled white; under tail-coverts buff, barred with black; under wing-coverts white.

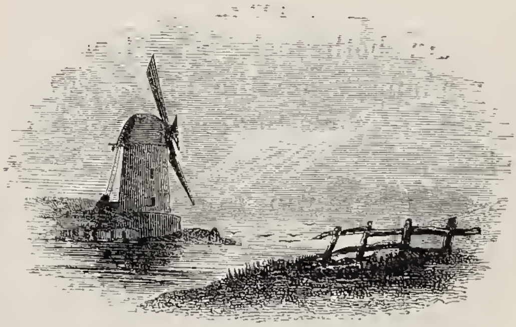
The whole length of a male is fifteen inches. From the carpal joint to the end of the wing, eight inches: the first quill-feather an inch and a half shorter than the second; the second rather longer than the fifth; the third and fourth nearly equal in length, and the longest in the wing. The wings of the old birds killed in autumn are seldom perfect, as this is the season for moulting the flight-feathers.

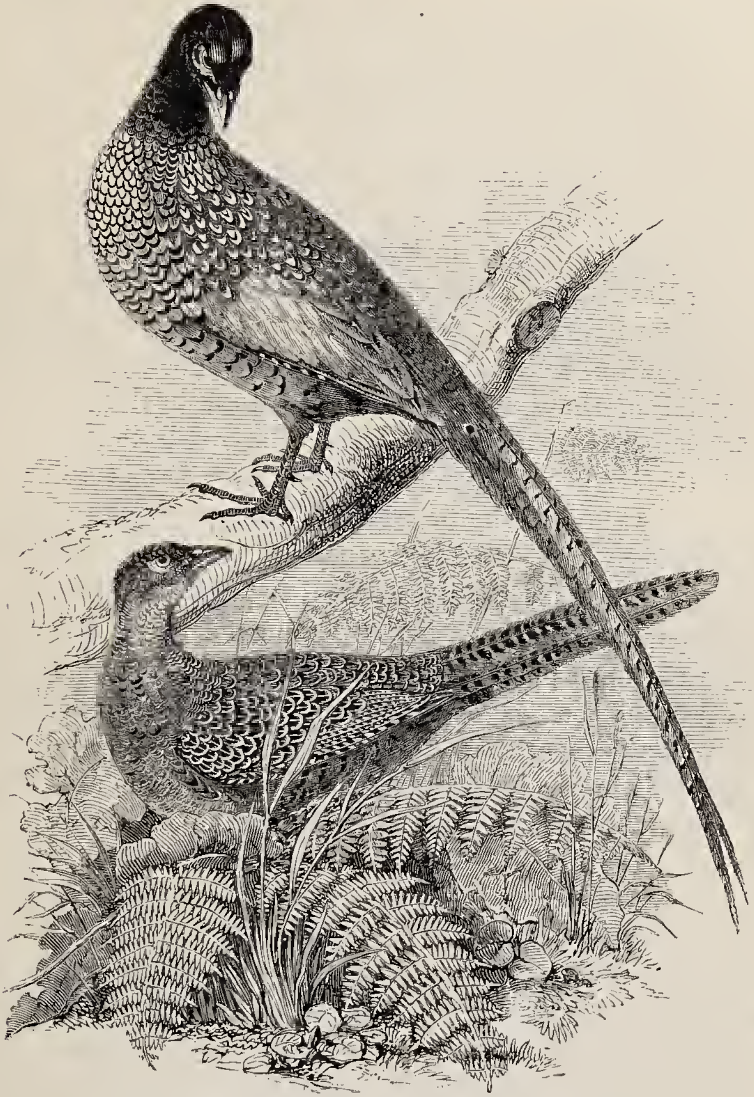
Early in autumn both males and females moult into a freckled grey plumage on the upper parts; the quill-feathers, and some of the wing-coverts, with those on the middle of the belly, being white; by the end of October this plumage changes to pure white in Continental specimens; and to white with slight mottlings about the bases of the feathers, in some Scotch examples; the tail-feathers remaining black, but being nearly concealed by the long white coverts. The fur-like feathers on the legs and feet increase in length and thickness. In this winter plumage the males have the lores black, whereas in the female the lores are usually white; but some old females shew a dark eye-streak. This garb is retained until the following spring. Macgillivray mentions two hen birds from Banffshire examined on the 16th December, which had the white plumage delicately tinted with rose-colour.

In the young, with the quill-feathers just appearing, the down is rather more ruddy than in the Red Grouse, and the patch on the crown and nape is of a rather paler chestnut in the centre; but when half-fledged the young are greyer than those of the Grouse. The first quill-feathers are mottled brown, but in August they are replaced by white ones, and a grey body plumage, similar to that of the adults, is assumed.

In winter large numbers of so-called "Ptarmigan" are sent over to the English markets; fully seven-eighths of them being, however, Willow-Grouse in winter dress. These may be recognized by their larger size, and, in the case of the males, by the absence of the black lores, which are always present in the male Ptarmigan.

In the three representations of the Ptarmigan at the head of this subject, the lower figure is taken from a female killed in the month of May, the upper figure from a male killed in October, and the middle figure from a male bird killed in January.





Phasianus colchicus (Linnæus*).

THE PHEASANT.

Phasianus colchicus.

Phasianus, *Brisson*†.—Bill of moderate length, strong; upper mandible convex, naked at the base, and with the tip bent downwards. Nostrils basal, lateral, covered with a cartilaginous scale; cheeks, and the skin surrounding the

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[*] Syst. Nat. Ed. 12, i. p. 271 (1766). [†] Ornithologie, i. p. 262 (1760).

eyes, destitute of feathers, and with a verrucose red covering. Wings short: the first quill-feather narrow towards the tip; the fourth and fifth feathers the longest in the wing. Tail long, wedge-shaped, graduated, containing eighteen feathers. Feet—three toes in front, one behind; the three anterior toes united by a membrane as far as the first joint; the hind toe articulated upon the tarsus, which in the male birds is furnished with a horny, conical, and sharp spur.

Both the generic and specific names of the Pheasant are due to the mythological tradition which attributes to Jason and his Argonauts the introduction of the bird from the banks of the river Phasis, in Colchis. This classic stream is the modern Rion, which finds its way into the Black Sea near the town of Poti, whence the railway now runs to Tiflis, the capital of the Caucasus; and in its unhealthy swamps the descendants of the original stock are still to be found in all their purity. The head-quarters of this Pheasant appear to be the marshy forests of the shores of the Caspian Sea, as far east as the river Gurgan, near Astrabad; the river-valleys of the Caucasus, especially the Terek and Goulak up to 3,000 feet elevation; the neighbourhood of Astrakhan; and the northern portions of Asia Minor which border on the Black Sea and the Sea of Marmora, particularly near Broussa. It occurs as far south as Ephesus, but Mr. Danford did not meet with it in the Cilician Taurus, nor did Canon Tristram find it in Syria. In Greece the remains of a species of Pheasant have been disinterred at Pikermi, in Attica, and its modern representative still frequents the covers at the foot of Mount Olympus, although nearly exterminated in the swamps of Akarnania. Not known in Cyprus or Rhodes, it occurs on the island of Thasos near Salonika, and in suitable localities throughout Roumelia, as well as in Albania; but north of the line of the Balkans it is probably not indigenous. Assuming it to have been introduced at some unknown period, it is now found in a feral state in nearly every country in Europe. It occurs in South Russia; in Transylvania, although now nearly exterminated, it was formerly abundant; and in Bohemia and some parts of Saxony it wanders uncared for; but north of Central Germany it requires, and receives, a certain amount of protection. Under such conditions it exists in Holland, Belgium, Denmark, Sweden (where it has been introduced by Mr. Oscar Dickson), and even near Christiania, in Norway. In France* and Italy it also maintains itself under similar protection; but it is said to exist in a perfectly wild state on the hills of Aleria, in Corsica†; Spain and Portugal being apparently the only European countries where attempts at acclimatization have not proved successful. Some of these more recent introductions on the Continent may have consisted of fertile crosses with the Chinese Ring-necked Pheasant; but as regards the greater part of Europe, and the British Islands, there can be no doubt that the original species was *P. colchicus.*

Before going further, it may be as well to consider briefly the range of our Pheasant, and the other members of the same group. It has been shewn that *P. colchicus*, one of the species without the white collar, inhabits wet marshy forests as far east as Astrabad, beyond which it now meets with the barrier of the desert of Mariana. East of the great Tian Shan range, on the plains and in the jungles of Eastern Turkestan, especially in the neighbourhood of Kashgar and Yarkand, is found another collarless species, *P. shawi*, which even when taken young is one of the most untamable of birds in captivity.‡ Mr. D. G. Elliot (Monogr. Phasianidæ, ii.) considers that this is the original stock of the group, and to it may be united a doubtfully distinct and at all events closely allied species described from two headless specimens, under the name of *P. insignis*, also found in Yarkand. These forms lead to *P. mongolicus*, a well-marked species with a broad white collar, an amethystine throat, and a greenish rump, which is found near Bokhara, on the Syr-Daria (the ancient Jaxartes), and thence, past Lake Balkash, throughout that portion of Mongolia which lies to the north of Gobi. On the Amu-Daria (the ancient Oxus) is found a remarkably handsome species, *P. chrysomelas,* with a small white collar and rich golden neck and breast-feathers tipped with emerald green; but although nearer in point of distance to *P. colchicus,* neither of the above so closely resemble our Pheasant as does *P. shawi,* which is now found only on the eastern side of a lofty range whose passes attain an altitude of 14,000 feet. This distribution is exceedingly puzzling, and can only be cleared up by more exact information. The other species of the group are the collarless *P. decollatus* of Moupin, where it is the only species, but which mixes on its eastern frontier with the collared *P. torquatus* of Southern China; the two collarless species, *P. elegans* of the west of Sechuen and Yunnan, and *P. versicolor* of Japan; and the collared *P. formosanus,* of the island of Formosa. Excepting for the introduction of *P. torquatus* and *P. versicolor* into our covers, these species have no immediate bearing upon the question.

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* The bone-beds of Sanson in Gascony have yielded remains which have been referred to two species of *Phasianus.*

† H. H. Giglioli, 'Ibis,' 1881, p. 207.

‡ Scully, 'Stray Feathers,' 1876, p. 179.

Whatever may have been the date of the introduction of the Pheasant into England, it has undoubtedly maintained itself in this country in a wild state for a period sufficient to entitle it to be considered a British bird. Upon this point Professor Boyd Dawkins has contributed the following:—

"It may interest your readers to know that the most ancient record of the occurrence of the Pheasant in Great Britain is to be found in the tract 'De inventione Sanctæ Crucis nostræ in Monte Acuto et de ductione ejusdem apud Waltham,' edited from manuscripts in the British Museum by Professor Stubbs, and published in 1861. The bill of fare drawn up by Harold for the Canon's household of from six to seven persons, A.D. 1059, and preserved in a manuscript of the date of *circa* 1177, was as follows (p. 16):—

"'Erant autem tales pitantiæ unicuique canonico: a festo Sancti Michaelis usque ad caput jejunii [Ash Wednesday] aut xii. merulæ, aut ii. agauseæ [*Agace,* a magpie (?): *Ducange*] aut ii. perdices, aut unus *phasianus,* reliquis temporibus aut ancæ [Geese: *Ducange*] aut gallinæ.'

"Now the point of this passage is that it shews that

Phasianus colchicus had become naturalized in England before the Norman invasion; and as the English and Danes were not the introducers of strange animals in any well-authenticated case, it offers fair presumptive evidence that it was introduced by the Roman conquerors, who naturalized the Fallow Deer in Britain."*

It appears by Dugdale's 'Monasticon Anglicanum' that at the commencement of the reign of Henry I. (A.D. 1100) license was given to the Abbot of Amesbury to kill hares and Pheasants; and, according to Echard's History of England, in A.D. 1299, during the reign of Edward I. the price of a Pheasant was fourpence; the value of a Mallard being three-halfpence, a Plover one penny, and a couple of Woodcocks three-halfpence. To these early notices may be added one contributed by the *Saturday Review* critic of the 1st Edition of Mr. W. B. Tegetmeier's admirable treatise on 'Pheasants,'† to wit that Thomas à Becket, on the day of his martyrdom (December 29, 1179), dined on a Pheasant and enjoyed it, as it would seem from the remark of one of his monks that "he dined more heartily and cheerfully that day than usual."

Mr. Harting, in his 'Ornithology of Shakspeare,' gives numerous interesting details and quotations, shewing the esteem in which this bird was held for the table in somewhat more recent times. It appears, by Leland's account of the feast at the enthronization of George Nevill, Archbishop of York in the reign of Edward IV., that two hundred "fessauntes" were served with other meats; and in the 'Household Book' of the L'Estranges of Hunstanton, from A.D. 1519 to A.D. 1578, there are such entries in the reign of Henry VIII. as "vj. *fesands* and ij. ptrychys kyllyed w̅t the hauks." "Item, to Mr. Ashley's servant for bryngyng of a Fesant Cocke and four Woodcocks on the 18th day of October, in reward, four-pence." "Item, a Fesant kylled with the Goshawke." Similar allusions are made in the

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* Ibis, 1869, p. 358.

† See p. 18 of the 2nd Edition (1881), to which the Editor is under great obligations.

'Household Book' of the fifth Earl of Northumberland (1512), and from the time of the Tudor monarchs, Pheasants are specified with Partridges in the statutes for the protection of game.

In Scotland, according to Mr. R. Gray,* the first mention of the Pheasant occurs in an Act dated June 8, 1594, in the reign of James VI., a great protector of all kinds of game. In the aforesaid year he "ordained that quhatsumever person or persones at ony time hereafter sall happen to slay deir, harts, phesants, foulls, partricks, or uther wyld foule quhatsumever, ather with gun, crace bow, dogges, halks, or girnes, or be uther ingine quhatsumever, or that beis found schutting with ony gun therein," &c., &c., shall pay the usual "hundreth punds," &c. It is now generally distributed in suitable localities from Sutherland to Wigtownshire, and in the neighbourhood of Loch Lomond it is occasionally seen on the mountain-sides as far up as 1,200 feet. Introduced into Lewis in the Outer Hebrides about fifteen years ago by Sir James Matheson, it has become fairly established there, as well as in Islay, where it grows to a large size. The east side of Scotland does not, as a rule, appear to be so well suited to it, but it has thriven in the coverts near Banff belonging to the Earl of Fife.

As regards Ireland, the date of its introduction is unknown. Giraldus Cambrensis, in his 'Topographia Hibernica' (A.D. 1183–1186), expressly states that in his day there were neither Pheasants nor Partridges; and Ranulphus Higden, who died at an advanced age about 1363, mentions in his 'Polychronicon,' 'perdices' and 'phasiani' as being absent from Ireland.† About two centuries later, in 'A Brife Description of Ireland made in the yeere 1589 by Robert Payne,' is the following:—"There be great store of wild swannes, cranes, *phesantes*, partriges, heathcocks, plouers greene and gray, curlewes, woodcockes, rayles, quailes, and all other fowles much more plentifull than in England." Fynes Moryson, who was in Ireland from 1599 till 1603, observes that "they have such plenty of pheasants, as I have known sixty served up at one feast, and abound much more with rails, but partridges are somewhat scarce." (Descr. of Ireland, ii. p. 368.) Smith seems to have imagined that Pheasants were indigenous to the island, as in his History of Cork it is remarked:—"They are now [1749] indeed very rare, most of our woods being cut down." At the present day it is generally distributed throughout the wooded parts of the island.

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* Birds of the West of Scotland, p. 226.

† Harting, 'Zool.' 1881, pp. 437 and 439.

Up to the end of the last century our Pheasant had deviated but little, if indeed at all, from the typical *P. colchicus;* but about that time the introduction of the Chinese Ring-necked bird, *P. torquatus*, commenced. The males of this hardy species, although smaller in size than the English birds, are exceedingly pugnacious, and perhaps also the beauty of their plumage rendered them peculiarly attractive to the hens. At all events, in a polygamous bird like the Pheasant, they rapidly effected a considerable alteration in the breed, and at the present day it is difficult to find birds without some trace of hybridism. Some offsprings of the first cross are, indeed, scarcely to be distinguished from the Chinese bird; and although many of the features of that species are gradually bred out, yet the characteristic white ring is long retained. The beautiful Japanese Pheasant, *P. versicolor*, has also been introduced in small numbers; some magnificent hybrids being the result, although the influences of the cross have not proved lasting. Examples of the splendid long-tailed *P. reevesi* have also been turned out, and in some districts they have succeeded very well; as many as sixty having been shot in a single season in the covers of Lord Tweedmouth in Inverness-shire. Lord Lilford, who presented to the British Museum a fine male hybrid shot in Sussex in December, 1879, says that they have done fairly in Northamptonshire, but considers that in this country a wide range of hill coverts would be most suitable to them; whilst for the table, he thinks they are distinctly superior to our common bird. The so-called Bohemian Pheasant is merely a pale buff-coloured variety which crops up in certain localities.

Whilst on the subject of introduction, it may be mentioned that Pheasants have been imported both from England and China into New Zealand, where they have multiplied with marvellous rapidity. The Chinese Pheasant was acclimatized in the island of St. Helena in 1513 by some Portuguese exiled from Goa, and their descendants continue to thrive; a slight variation from the original type being noticeable in their plumage, probably owing to the influences of altered climate and diet. Pheasants have also been introduced in the neighbouring island of Ascension.

Woods that are thick at the bottom, with long grass kept up by brambles and bushes, thick plantations, or marshy islands and moist grounds overgrown with rushes, reeds, or osiers, are the favourite resorts of Pheasants, in default of which they take to thick hedgerows, but can seldom be induced to remain long on any ground bare of shelter, however undisturbed. Wood and water are indispensable.

The short crow of the males may be heard in March, when they fight freely for the possession of the hens, and display their plumage to the greatest advantage. The females have been known to commence laying in that month, although, as a rule, not until April, hatching by the end of May or the beginning of June. Sitting birds have also been found as late as the beginning of September. They make a slight nest upon the ground, in which they deposit from ten to fourteen eggs, measuring about 1·85 by 1·45 in., generally of a uniform olive-brown colour; but pale bluish varieties are, however, not uncommon. The well-known suppression of the scent in a sitting hen, so necessary for the safety of a ground-nesting species, is due, in the opinion of Mr. Tegetmeier, to vicarious secretion; that is to say, the odoriferous particles which are usually exhaled by the skin are, during incubation, excreted into the intestinal canal.

Incubation lasts about twenty-four days. Two and even three hen Pheasants will sometimes lay in the same nest, and many instances are on record of nests containing both

Partridges' and Pheasants' eggs, the hens of both species having been observed sitting side by side in perfect amity. The common fowl has also been taken into partnership; and three wild hen Pheasants are said to have availed themselves of the nest of a tame Duck. Lofty situations, such as old nests and squirrels' dreys in trees, are sometimes selected, but the entire brood is rarely brought down in safety. Cock birds, as a rule, take no share whatever in the duties of incubation; yet there are a few well-authenticated instances of their having been seen sitting on nests in covers, as well as in aviaries, and also of their assuming the protection of the young brood.

The food of Pheasants in a wild state consists of grain, seeds, green leaves, and insects, especially ants and their larvæ, which form the chief sustenance of the young. They have been observed pulling down ripe blackberries from a hedge-side, and later in the year flying up into high bushes to pick sloes and haws. The root of the buttercup, *Ranunculus bulbosus*, and also the pilewort crowfoot, *Ranunculus ficaria*, forms a great portion of their food during the months of May and June, and at the latter end of autumn their crops are often found to be distended with acorns of so large a size, that they could not have been swallowed without great difficulty. The "spangles" or galls of the oak are also favourite food. Pheasants destroy enormous numbers of injurious insects; no less than 1,200 wire-worms having been taken out of the crop of a single bird, and from another Mr. F. Bond extracted 440 grubs of the crane-fly. Several instances are on record of the slow-worm (*Anguis fragilis*) being devoured, and there is one instance of a Pheasant being found dead, evidently choked by swallowing a short-tailed field-mouse. The leaves of the yew-tree have also been known to prove fatal, and shot, picked up in the covers, has produced lead-poisoning.[*] Towards and throughout the winter, Pheasants in preserves, to prevent them from straying away in their search for food, require to be supplied constantly with barley in the straw, or beans, or both; and one good mode of inducing them to stop at home is to sow in summer, beans, peas, and buckwheat, mixed together, leaving the whole crop standing on the ground; the strong and tall stalks of the beans carry up, sustain, and support the other two, and all three together afford, for a long time, both food and cover. Maize or Indian corn is, however, preferred to any other food.

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[*] W. B. Tegetmeier, 'Pheasants,' Ed. 2, p. 88.

During summer, till the old birds have completed their seasonal moult, Pheasants do not roost constantly in trees, but afterwards they may be heard, about dusk, to go up to their roost, by the flutter of their wings, and their peculiar notes; the male giving his short chuckling crow, and the female her more shrill piping whistle, as soon as they get upon their feet on the branch: both generally roost upon the smaller trees, and near the stem. Unless disturbed, and obliged to secure their safety by flight, Pheasants seldom use their wings, except, as before noticed, at night and morning; nor have they much occasion, as a mode of progression, for they get over the ground with remarkable speed by running. But when well on the wing they fly with tremendous force, and plate-glass windows $\frac{1}{4}$ inch thick have been smashed into fragments by birds deceived by the reflection in a mirror facing the window, or attracted by a light inside; and also when pursued by a hawk. As regards the duration of flight, Mr. Cordeaux states that when shooting in the marshes near Grimsby on the Lincolnshire side of the Humber, which is there nearly four miles across, a man working on the sea embankment called his attention to two Pheasants which had just flown over from the Yorkshire side, and which, on being shot, proved to be hens in very good condition. Pheasants can also swim with considerable facility, both old and young birds having occasionally been known to take to the water of their own free will. Although capable of being rendered tame, and even in individual cases disagreeably familiar, the Pheasant never becomes domesticated in the same sense as our common fowls; the young, even when hatched under a domestic hen and accustomed to be fed, always betaking themselves to the covers on the approach of strangers.

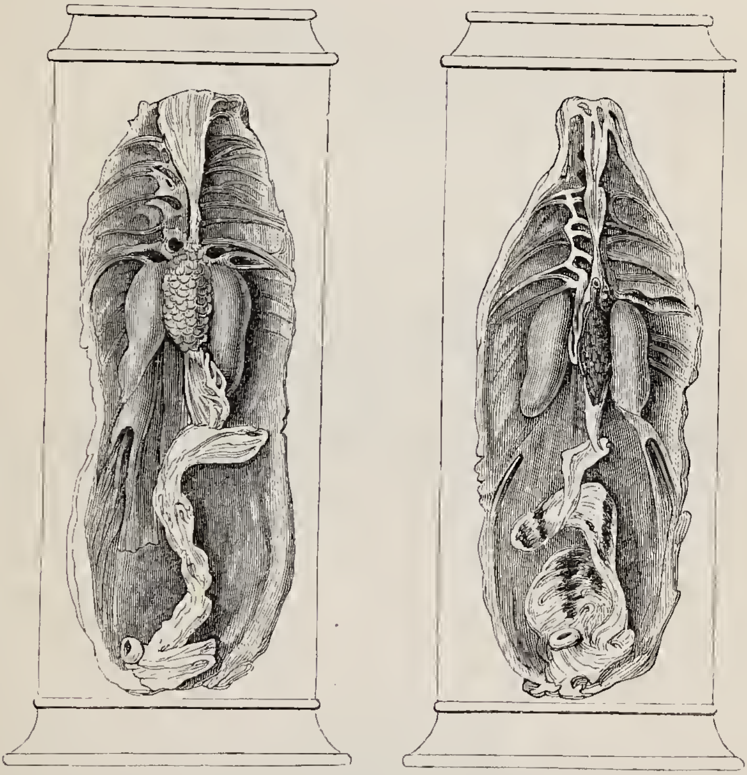
In the last Edition mention is made of a brace of cock Pheasants which turned the scale at 9lbs.; but this weight has since been surpassed in several instances; the heaviest as yet on record being one described in 'The Field,' vol. xlvi. p. 179, weighed independently by Mr. Kelly and Admiral Sir Houston Stewart, and which attained to 6lbs. less 1oz. This was doubtless owing to the fattening influence of feeding on maize; and the average of an old cock bird may be taken at 3lbs. to 3½lbs., and a hen about 2½lbs.

Like other gallinaceous birds, the Pheasant has a strong inclination to breed with other birds, not of its own species. Edwards long ago figured, plate 337, a bird which was considered to have been produced between a Pheasant and a Turkey. I have twice been shewn birds that were said to be the produce of the Pheasant and the Guinea Fowl, and the evidence to be derived from the plumage was in favour of the statement. Of birds produced between the Pheasant and the Black Grouse, several figures and particulars have been given under the head of Black Grouse. Birds produced between the Pheasant and Common Fowl are of frequent occurrence, and such a one is usually called a Pero. The Zoological Society have possessed several, which were for a time kept together, but shewed no signs of breeding; they are considered, like other hydrids, to be unproductive among themselves, all being half-bred; but when paired with the true Pheasant or the Fowl, the case is different. In September, 1836, a communication from Mr. Edward Fuller, of Carleton Hall, near Saxmundham, was read, which stated that his gamekeeper had succeeded in rearing two birds from a Barn-door Hen having a cross from a Pheasant, and a Pheasant cock; that the birds partook equally of the two species in their habits, manners and appearance, and concluded by presenting them to the Society. The gamekeeper, in a short note which accompanied the birds, stated that he had bred them, and they were three-quarter-bred Pheasants. (Zool. Proceedings for 1836, p. 84.) Several specimens of hybrids, from the preserved collection in the Museum of the Society, were placed on the table the same evening for exhibition and comparison. These had been bred between the Pheasant and Common Fowl, the Common Pheasant and the Silver Pheasant, and the Common Pheasant with the Gold Pheasant. The Rev. Richard Lubbock, in his 'Fauna of Norfolk,' mentions that in the beginning of January, 1845, he was called into a bird-preserver's shop to look at a curious hybrid obtained near Thetford, believed to be bred between a Pheasant and a Red-legged Partridge; but Mr. J. H. Gurney, who has examined this bird, says it is without doubt a female Golden Pheasant.

A history of our Pheasant would be incomplete without a notice of that remarkable assumption of a plumage resembling that of the male observed to take place in some of the females, and which is well known to sportsmen and gamekeepers, by whom such birds are usually called Mule Pheasants. The name is correct, since some of our dictionaries shew that the term mule is derived from a word which signifies barren, and these hen Pheasants are incapable of producing eggs, from derangement of the generative organs; sometimes owing to an original internal defect, sometimes from subsequent disease, and sometimes from old age. The illustration given on the next page represents on a small scale a preparation of part of the body of a healthy female Pheasant in winter, in the left-hand figure; and that of a diseased female Pheasant on the right hand. The disorganization is marked by the appearance of the dark lead colour pervading the ovarium, situated on the middle line, and between the two kidneys, which dark colour is seen in patches on various parts of the oviduct below; and I have never examined a hen Pheasant assuming the plumage of the male without finding more or less of the appearance here indicated.

In some seasons, for instance those of 1881 and 1882, a preponderance of cock-birds compared with hens has been observed. Mr. Harvie-Brown states that such has been the case with birds hatched in his covers from eggs obtained from Elveden, and also in many covers in Peebles, Fife, Dumbarton, and Perthshire. Similar accounts have been received from Norfolk, Surrey, and Sussex.

In the adult male the beak is of a whitish horn colour, rather darker at the base; the eyes surrounded with a naked skin of a bright scarlet colour, speckled with a bluish-black; the irides hazel; the head, and the neck all round, steel-blue, reflecting brown, green, and purple, in different lights; ear-coverts dark brown; feathers of the upper part of the back orange-red, tipped with velvet-black; back and scapulars orange-red, the centre of each feather dark brown, with an outer band of straw-yellow; saddle hackle feathers, rump, and upper tail-coverts, light brownish-red; wing-coverts of two shades of red; quill-feathers dull greyish-brown, varied with pale wood-brown; tail-feathers very long, pale yellow-brown, with narrow transverse black bars about one inch apart; breast and belly golden red; each feather margined with velvet-black, and reflecting tints of gold and purple; lower part of the belly, vent, and under tail-coverts, brownish-



black; legs, spurs, toes, and claws, brownish-lead colour; the spurs become pointed and sharp after the first year.

The whole length of a male Pheasant is about three feet, depending upon the age of the bird, and the consequent length of the two middle feathers of the tail, which frequently measure two feet. Wing from the carpal joint to the end, nearly ten inches; the wing in form rounded; the fifth quill-feather the longest.

The female measures about two feet. The general colour of the plumage pale yellowish-brown; varied by different shades of darker brown; sides of the neck tinged with red and green. Females assuming the plumage of males may be known by the absence of brilliancy of tint, and the golden red feathers on the breast generally want the contrast of the broad dark velvet-like margin. The legs and feet retain their smaller and more slender female character, and are usually without spurs; but Mr. Bond has an example with a spur on one leg.

Young birds, of both sexes, in their first plumage, resemble the females.

White and Pied varieties of the Pheasant are not uncommon; but for further details, as well as for instructions as to the management of Pheasants both in the covert and the aviary, and the disorders to which they are liable, the reader is referred to Mr. Tegetmeier's excellent work already mentioned.

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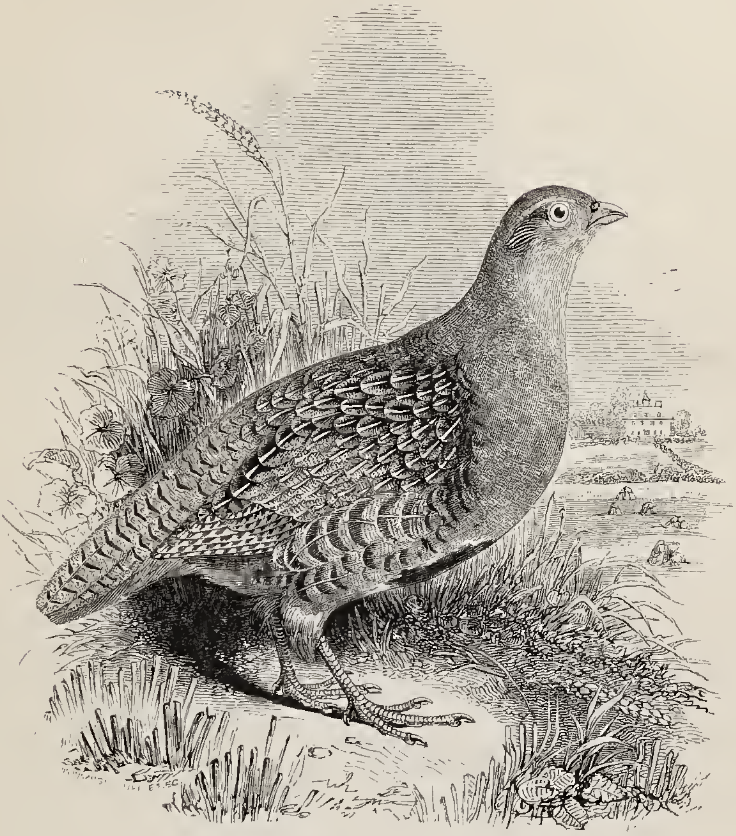

PERDIX CINEREA, Latham.*

THE COMMON PARTRIDGE.

Perdix cinerea.

PERDIX, *Brisson*†.—Bill short, strong, naked at the base; upper mandible convex, deflected towards the tip. Nostrils basal, lateral, the orifice partly concealed by an arched naked scale. Wings short, concave, rounded in form; the first three feathers shorter than the fourth or fifth, which are the longest in the wing. Tail, of eighteen feathers, short, rounded. Feet, with three toes in front, and one behind, those in front united by a membrane as far as the first articulation.

THE enlarged demands of an increasing population, tempting prices in seasons of scarcity, or the progress of science unfolding the nature of soils, have each in turn induced the cultivation of various tracts of ground unploughed before; and as the labours of the agriculturists encroach upon the boundaries of the moor, the Grouse retires, and the Partridge takes its place upon the land: the districts best cultivated, and producing the most corn, frequently also producing the greatest number of Partridges.

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* Ind. Orn., ii. p. 645 (1790, ex. Brisson).

† Ornithologie, i. p. 219 (1760).

Of a bird so universally known, little that is new can be said; with its appearance and its habits almost all are familiar. These birds pair in February; but seldom begin to lay eggs till towards the end of April or the beginning of May; a slight depression in the ground, with a few dead leaves or dried grass bents scratched together, serves for a nest; and the place chosen is sometimes only a few yards from a public footpath. Occasionally, also, the nest of a Partridge is found in a situation the least likely to be occupied by a bird so decidedly terrestrial in its habits. In Daniel's 'Rural Sports,' it is recorded that a Partridge made her nest on the top of an oak pollard; and this tree had one end of the bars of a stile, where there was a footpath, fastened into it, and by the passengers going over the stile before she sat close, she was disturbed, and first discovered. She there hatched sixteen eggs; and her brood, scrambling down the short and rough ground which grew out all round from the trunk of the tree, reached the ground in safety. The eggs of the Partridge are, however, mostly deposited among brushwood or long grass, or in fields of clover and standing corn; they are generally of a uniform olive-brown colour, but pale blue or whitish varieties are not very uncommon: they measure about 1·45 by 1·1 in., and from twelve to twenty are produced by one female. Twenty-eight eggs in one instance, and thirty-three eggs in two other instances, are recorded as having been found in one nest; but there is little doubt in these cases that more than one bird had laid eggs in the same nest. In one of the instances recorded, in which the nest with thirty-three eggs was in a fallow field, twenty-three young birds were hatched out and went off with the old ones, and four of the eggs left behind had live birds in them. The attachment of Partridges to their eggs and young is proverbial. Montagu mentions an instance in which a Partridge, on the point of hatching, was taken, together with her eggs, and carried in a hat to some distance; she continued to sit, and brought out her young. Mr. Jesse mentions two cases:—"A farmer discovered a Partridge sitting on its eggs in a grass-field. The bird allowed him to pass his hand frequently down its back without moving, or showing any fear; but if he offered to touch the eggs, the poor bird immediately pecked his hand. A gentleman living near Spilsby, in Lincolnshire, was one day riding over his farm and superintending his ploughmen, who were ploughing a piece of fallow land. He saw a Partridge glide off her nest so near the foot of one of his plough-horses, that he thought the eggs must be crushed; this, however, was not the case; but he found that the old bird was on the point of hatching, as several of the eggs were beginning to chip. He saw the old bird return to her nest the instant he left the spot. It was evident that the next round of the plough must bury the eggs and the nest in the furrow. His surprise was great when, returning with the plough, he came to the spot, and saw the nest indeed, but the eggs and bird were gone. An idea struck him that she had removed her eggs; and he found her, before he left the field, sitting under the hedge upon twenty-one eggs, and she brought off nineteen birds. The round of ploughing had occupied about twenty minutes, in which time she, probably assisted by the cock bird, had removed the twenty-one eggs to a distance of about forty yards."

Incubation with the Partridge lasts twenty-one days, and the great hatching-time in the southern parts of England is from the 20th of June till the end of that month.* Mr. Selby observes, that "as soon as the young are excluded, the male bird joins the covey, and displays equal anxiety with the female for their support and defence. There are few persons conversant with country affairs who have not witnessed the confusion produced in a brood of young Partridges by any sudden alarm; or who have not admired the stratagems to which the parent birds have recourse, in order to deceive and draw off the intruder. Their parental instinct, indeed, is not always confined to mere devices for engaging attention; but where there exists a probability of success, they will fight obstinately for the preservation of their young, as appear from many instances already narrated by different writers, and to which the following may be added, for the truth of which I can vouch:—A person engaged in a field, not far from my residence, had his attention arrested by some objects on the ground, which, upon approaching, he found to be two Partridges, a male and female, engaged in battle with a Carrion Crow; so successful and so absorbed were they in the issue of the contest, that they actually held the Crow till it was seized and taken from them by the spectator of the scene. Upon search, young birds, very lately hatched, were found concealed amongst the grass. It would appear, therefore, that the Crow, a mortal enemy to all kinds of young game, in attempting to carry off one of these, had been attacked by the parent birds, and with this singular result. The Editor has seen, near Lynton, in North Devon, the old birds shew a bold front to a Hen-Harrier, to enable their brood to gain the protection of a hedge. Their desire to go to nest, and their partiality to a young brood, is sometimes shewn in another manner. In 1808, at Mark's Hall, in Essex, Payne, the gamekeeper, noticed a brace of Partridges, whose nest had been destroyed, taking to a nest of Pheasant's eggs, the hen of which had been killed by accident. The Partridges hatched and brought up ten young Pheasants. The keeper frequently shewed his master, Colonel Burgoyne, and others, the old Partridges with the young Pheasants, at different periods of their growth.*

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* Abnormal instances of nests containing eggs in January, and young being hatched in February, are on record.

During the day a covey of Partridges, keeping together, are seldom seen on the wing unless disturbed; they frequent grass-fields, preferring the hedge-sides, some of them picking up insects, and occasionally the green leaves of plants; others dusting themselves in any dry spot where the soil is loose, and this would seem to be a constant practice with them in dry weather, if we may judge by the numerous dusting-places, with the marks and feathers, to be found about their haunts; and sportsmen find, in the early part of the shooting-season, that young and weak birds are frequently infested with numerous parasites. In the afternoon the covey repair to some neighbouring field of standing corn, or, if that be cut, to the stubble, for the second daily meal of grain; and, this completed, the call-note may be heard, according to White, as soon as the beetles begin to buzz, and the whole move away together to some spot where they jug, as it is called—that is, squat and nestle close together for the night; and from the appearance of the mutings, or droppings, which are generally deposited in a circle of only a few inches in diameter, it would appear that the birds arrange themselves also in a circle, of which their tails form the centre, all the heads being outwards,—a disposition which instinct has suggested as the best for observing the approach of any of their numerous enemies, whatever may be the direction, and thus increase their security by enabling them to avoid a surprise. In the morning early they again visit the stubble for a breakfast, and pass the rest of the day as before. Fields of clover or turnips are very favourite places of resort during the day. Mr. Harvie-Brown informs the Editor that when the snow lay upon the ground he has known a covey to roost regularly on a limb of a large tree; and he has also seen Partridges "treed" by a dog.

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* Daniel's Supplement, p. 397.

Many Partridges are annually reared from eggs that are found, or mowed out in cutting clover or grass, these eggs being hatched under hens. The young birds should be fed with ants'-eggs, curd, grits; small grain and some vegetables, when the birds are old enough. Partridges thus hatched and reared become so tame as even to be troublesome, running close about the feet of those who are in the habit of supplying them several times daily with food. Although they live for years in an aviary, records of the Partridge breeding in confinement are rare. Sir Thomas Marion

Wilson, Bart., had a small covey of seven or eight hatched and reared by the parent birds in his aviary at Charlton in the summer of 1842. Dry summers are particularly favourable to the breeding of Partridges; White, in his 'History of Selborne,' notes, that after the dry summers of 1740 and 1741, Partridges swarmed to such a degree, that "unreasonable sportsmen killed twenty and sometimes thirty brace in a day." The late Earl of Leicester, on the 7th of October, 1797, upon his manor at Warham, and within a mile's circumference, bagged forty brace of Partridges in eight hours, at ninety-three shots: every bird being killed singly; and the day before, on the same ground, he killed twenty-two brace and a half in three hours. This was wonderfully good shooting in the days of flint-locks, but as a bag it has long since been thrown into the shade. The largest bag of Partridges on record was made by the Maharajah Duleep Singh to his own gun in 1876, the number of 780 hand-reared birds being shot on one day, and 314 wild birds on another; the total of six days' shooting near Thetford being 2,530 Partridges, without counting ground-game.

When "driving" is practised, telegraph wires often prove fatal to Partridges, and they frequently fly against these unseen obstacles on foggy mornings.

Mr. Selby observes that the Partridge is found to vary considerably in size, according to situation, and the different nutritive qualities of food; thus, the largest are met with in districts where an abundance of grain prevails, whilst upon the precincts of moors, where arable land is scarce, they are much smaller in size, although by no means inferior in point of flavour. It has been observed to me also, that on some heathy districts in Surrey, such as the Hurtwood and Bagshot Heath, Partridges seldom frequent the corn-lands, but subsist on heath and hurtle-berries. These birds are not so white in the flesh when dressed, and have some of the flavour of the Grouse. A Partridge weighing 1lb. is above the average, but examples have been known up to 18 ozs.

The Partridge is so generally distributed over this country as to make an enumeration of particular localities unnecessary; but though plentiful in some of the low grounds of Scotland, it does not appear to have extended beyond a few of the islands of the Inner Hebrides. It was introduced in some of the Orkney Islands about 1840. In Ireland, although found in most of the cultivated districts, it does not seem to thrive, and of late years its numbers have on the whole diminished, from various causes.

In Norway the Partridge exists under difficulties, and its numbers fluctuate almost down to the point of extermination, owing to the rigour of the winters and the abundance of birds of prey, especially the Goshawk. In Sweden it has been known to occur as far as 66° N. lat., but it can hardly be said to flourish in any part of that country, or in Finland. Throughout the greater part of Denmark it is resident, as well as in Northern Germany down to Poland, and thence through Russia to the Ural. In Holland, Belgium, and Northern and Central France it is found in suitable localities down to Savoy, but in the south it gives place to the Red-legged species; nevertheless it occurs on both sides of the Pyrenees, especially in the moister regions to the west, where it holds its own against the Red-leg as far as Galicia, and down to the valley of the Ebro. In arid Southern Spain and Portugal it is almost unknown, but in Italy it ranges down to Naples. As Malherbe's statement, that it visits Sicily on its passages to and from Africa,* is often quoted in support of the supposed migratory habits of this bird, it may be mentioned that the recent careful investigations of Professor Doderlein, of Palermo, himself a great sportsman, afford no satisfactory evidence of its existence even in the mountains of that island; and it is quite unknown in Northern Africa. Neither is it indigenous to the island of Sardinia. The gradual destruction of the forests in some parts of Southern Germany and Austria appears to have favoured its increase, and it abounds in the cultivated districts of Albania, Macedonia, and Roumelia, whilst more to the northwards it is generally distributed throughout the steppes of Southern

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* Faune Ornithologique de la Sicile, p. 154.

Russia. In Asia Minor it appears to be very local, and almost confined to the central portions of the peninsula, Mr. Danford having obtained it near Angora (Ibis, 1880, p. 94); but eastward again, Sir Oliver St. John found it generally distributed in the mountainous districts to the north of Tehrán. Throughout the southern portion of its range it is, in fact, generally a frequenter of moderately elevated ground not altogether removed from the vicinity of cultivation. From the Altai eastward, in Dauria, Mongolia, and Northern China, it is replaced by a closely allied species, *Perdix barbata*, the male of which is characterized by its smaller size, golden-buff throat and breast, moustache-like tufts at the base of the lower mandible, and deep black horse-shoe mark on the lower breast. In Thibet and along the Himalayas from the borders of Cashmere to Sikkim is found a third and very handsome species, *P. hodgsoniæ*, which, whilst displaying a conspicuous horse-shoe, and having tarsi destitute of spurs, yet approaches the Red-legged group (*Caccabis*) in some points of coloration. These three are the only well-defined species of true *Perdix* as yet known, and the genus appears to be confined to the temperate portions of the Palæarctic region.

The adult male has the beak bluish-white; the irides hazel; behind the eye, and above the ear-coverts, a small triangular patch of naked red skin; the forehead, the space between the beak and the eye, with the feathers extending backwards as far as the ear-coverts, and downwards covering the front of the neck and throat, bright yellowish-chestnut; top of the head, hind neck, and upper back, freckled greyish-brown; lower back and wing-coverts freckled with two shades of chestnut-brown on a ground of wood-brown, the shaft of each feather forming a conspicuous streak of pale wood-brown; the quill-feathers brown, with transverse bars of wood-brown; the rump and upper tail-coverts, some of which are long, freckled with two shades of brown, and barred transversely with chestnut; tail-feathers eighteen in number: the two middle ones marked like the coverts, the next pair with chestnut centres and mottled edges, and the remaining fourteen reddish-chestnut.* The neck and upper part of the breast, the sides, and flanks, light bluish-grey, minutely freckled with dark grey; lower breast with a rich chestnut-coloured, horse-shoe-shaped patch on a ground of white; sides and flanks barred with chestnut; thighs greyish-white; under tail-coverts yellowish-brown; the legs and toes bluish-white; the claws brown.

The whole length of the male bird is twelve inches and a half. The wing is rounded in form. The length from the carpal joint to the end, six inches; the first feather about as long as the sixth; the second equal to the fifth; and all of them shorter than the third and fourth, which are the longest in the wing.

The female is generally a little smaller than the male; the light chestnut-coloured patch round the beak is lighter in colour, and smaller in size than in the male, not extending farther back over the sides of the neck than a line falling perpendicularly from the eye; the grey feathers of the lower part of the sides of the neck are more mixed with brown; the lower breast is greyish-white, not assuming the dark chestnut patch till the second or third year; the chestnut bars on the flanks are broader.

Young birds before their first autumn moult have no red mark behind the eye; the general plumage is of a uniform brownish-yellow, barred and streaked with darker brown; the legs and toes yellowish clay-brown. During the two first months of our shooting-season, the young Partridges may be found in every stage of moult.

Varieties of the Partridge in colour are very common, some exhibiting only patches of white; others are wholly white; and cream-coloured, or very pale buff-coloured varieties are also common. Birds from a gravelly soil are frequently very rich in colour, whilst those from the clay are often poor, and some Cambridge and also Devonshire birds are said to be nearly as grey as an autumn Ptarmigan. The neighbourhood of Saffron Walden produces sandy-coloured birds. In Flanders a tolerably constant pale variety is known by the name of *Perdix de marais*, and has been accorded specific rank by Demeezemaker as *Starna palustris*. Mr. Harvie-Brown has specimens of a local variety which seems to be on the increase, and in which the horse-shoe mark is white ; and Mr. J. H. Gurney, Junr., informs the Editor that several similar examples have been shot near Northrepps in Norfolk. Mr. J. Hancock (Nat. Hist. Tr. Northumb. and Durham, pls. xi. and xii.) has figured some remarkable varieties; and from his remarks it would appear that these aberrant states of plumage are mostly found in young birds which were gradually assuming the normal dress of the adult. A very red variety has been figured by the late Sir William Jardine (Nat. Lib. Ornith. iv. pl. ii.) under the name of *P. montana.*

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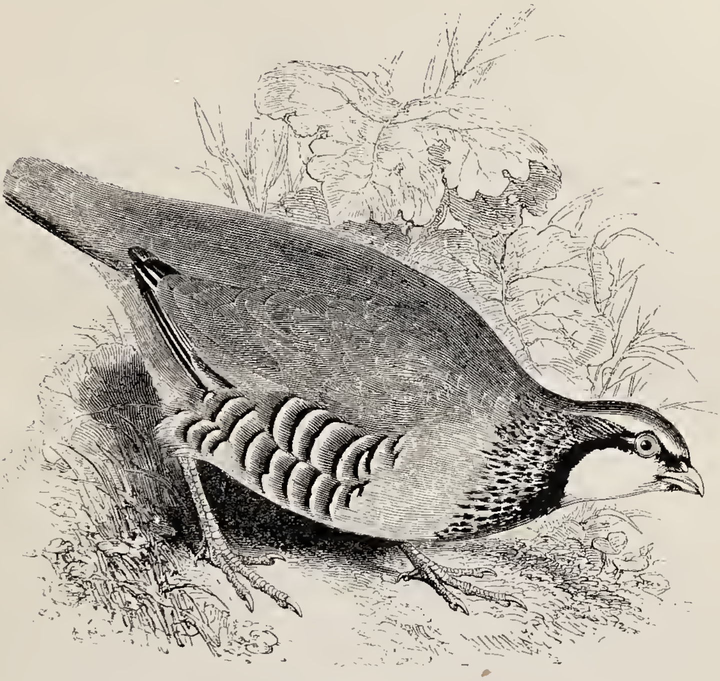
* It is not easy to count with accuracy the number of tail-feathers in prepared skins of Partridges, and authorities do not agree upon this point, owing to a difference of opinion as to whether the two central feathers belong to the true tail or to the upper tail-coverts. After examining a large number of birds in the flesh, the Editor has come to the conclusion that the Common Partridge has eighteen, and the Red-legged Partridge fourteen, true rectrices. The fact that, as a rule, these game-birds are only procurable in autumn, when they are in moult, adds to the difficulty.

Hybrids between the Partridge and any other species are uncommon, but Mr. F. Bond has a bird shot on Blubberhouse Moor, near Harrogate, in August 1866, by the present Lord Walsingham, which appears to be the result of a cross with the Red Grouse ; the bill being strong and Grouse-like, the tarsi and feet partially feathered, the breast and body mottled with pale reddish-brown with a sprinkling of grey, the quill-feathers dirty white, with lavender-grey outer webs. The brown colour of the upper parts is not very significant, but the feathering of the tarsi and feet seems tolerably conclusive. A few instances are also on record of hybrids between this species and the Red-legged Partridge.



Caccabis rufa (Linnæus*).

THE RED-LEGGED PARTRIDGE.

Perdix rufa.

Caccabis, *Kaup*†.—Bill short, stout, naked at the base; upper mandible decurved to the tip. Nostrils basal, lateral, partly covered and closed by an oblong horny scale. Wings short, rounded; the first three feathers shorter than the fourth and fifth, which are the longest. Tail, of fourteen feathers, short, rounded. Tarsi anteriorly scutellate, and, in the male, armed with blunt spurs; feet with one toe behind, and three in front united at their bases by a membrane.

The Red-Legged Partridge is one of the genus *Caccabis*, a well-defined group of birds which closely resemble each other in their main pattern of coloration, and also in their habits. They prefer sandy soils, and some of them are partial to mountainous districts; the sexes being alike;

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[*] *Tetrao rufus*, Linnæus, Syst. Nat. Ed. 12, i. p. 276 (1766), *partim.*

[†] Natürl. Syst. p. 183 (1829).

whereas in true *Perdix* they differ in plumage; and the males have blunt spurs, which is not the case with our bird. Their natural range is principally throughout the warmer portions of the Palæarctic, and the northern districts of the Ethiopian and Oriental regions.

Originally introduced from abroad, the Red-legged Partridge has maintained its position for upwards of a century, not only without assistance, but even in spite of some attempts to exterminate it, and its claim to a place in the British list is now generally admitted. It is stated in Daniel's 'Rural Sports,' that so long ago as the time of Charles the Second, several pairs of Red-legged Partridges were turned out about Windsor to obtain a stock; but they are supposed to have perished, although some of them, or their descendants, were seen for a few years afterwards; and I find other records of this bird having been killed in Berkshire. Mr. Daniel further states that the late Duke of Northumberland preserved many in hopes of their increasing upon his manors; and he also adds, that he himself, in 1777, within two miles of Colchester, found a covey of fourteen, which baffled for half an hour the exertions of a brace of good pointers to make them take wing, and the first which did so immediately *perched* on the hedge, and was shot there, without its being known what bird it was. This covey was probably descended from those introduced into England about the year 1770 by the Marquis of Hertford and Lord Rendlesham, each of whom had eggs procured on the Continent, carefully brought to England, and placed under domestic fowls; the former at Sudbourn, near Orford, in Suffolk, one of his shooting residences; the latter on his estates at Rendlesham, a few miles distant from Sudbourn. From these places the birds have been gradually extending themselves over the adjoining counties.

Professor Newton states that in the neighbourhood of Thetford, Suffolk, near which he formerly resided, the Red-legged Partridge was not much known till after 1823, when it was introduced by Lords de Ros and Alvanley at Culford, near Bury St. Edmunds, whence the birds spread rapidly on the adjoining estates, and became very plentiful. The eggs were brought from France, as Professor Newton was told by his father, who refused to have any at the time of their introduction. From this time onwards the Red-legs increased with such rapidity that in 1825 Messrs. Sheppard and Whitear (Trans. Lin. Soc. xv. p. 34) wrote, "These birds are now very plentiful in some parts of Suffolk. We have seen at least one hundred and fifty brace upon Dunmingworth-heath, and they are found in greater or less numbers from Aldborough to Woodbridge." Since then the species has spread into Cambridgeshire, Herts, Essex, Buckinghamshire, and even Middlesex, and has been found occasionally in other counties from Kent to Devonshire, and northwards to Westmoreland, but the Midland and North-eastern districts do not appear to suit it, and the counties of Norfolk and Suffolk, where it frequents both the light and the heavy lands, still remain its stronghold. In Scotland a solitary example was obtained near Aberdeen in January, 1867;* and an attempt to introduce the species into the Orkneys has failed. Neither does it appear to have thriven in Ireland, where, according to Thompson, it was introduced a few years prior to 1844.

This species was formerly known by the name of the Guernsey Partridge, owing to the belief that it was indigenous to that island; but Mr. Cecil Smith (Zool. 1881, p. 397) considers that, even as an introduced species, it is extinct both there and in the neighbouring islets: Jersey, where Mr. Harvie-Brown saw one a few years ago, being the only island on which any still exist. This disposes of the supposition that an example shot many years ago, near Weymouth, in Dorsetshire, had migrated from the Channel Islands; and, in fact, all the evidence at present available tends to shew that this species is nowhere in the habit of taking long migratory flights. Mr. Stevenson, who has gone very carefully into the question,† points out that although small coveys of birds are regularly met with in spring on various points of the east coast, generally in an exhausted condition, and although they have even been seen by an intelligent witness making for the land, at a distance of from four to five miles out at sea, yet there is in this nothing inconsistent with the probability of their having flown out to sea from our eastern shores, where they are already plentiful, and, having misjudged the distance, returning in an exhausted state. This frequently happens with Common Partridges shot at in the vicinity of the sea. Neither is there any country to the north or east of England whence they could have migrated, the species being unknown in Scandinavia and in Northern Germany. The very fact that, as stated by Sir Thomas Browne more than two centuries ago, this Partridge was then unknown in the eastern counties, and continued to be so until its introduction, is one of the strongest arguments against its vernal immigration at the present time.

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* R. Gray, 'Birds of the West of Scotland,' p. 243.

† 'Birds of Norfolk,' i. pp. 413–416.

In Belgium the Red-legged Partridge is almost unknown, nor is it abundant in the northern districts of France, but in Savoy it is tolerably numerous, and spreads for a short distance into Switzerland, where it meets with a larger and stronger congener, *C. saxatilis.** Throughout central and southern France it is generally distributed, and it is the only species of Red-leg indigenous to the Iberian Peninsula. Strong evidence of its non-migratory nature is afforded by the fact that although abundant on the hills of Spain within sight of the opposite coast of North Africa, it has never been known to cross the Straits; nor does it even visit the neighbouring Rock of Gibraltar, which is occupied by an introduced species, the Barbary Partridge, *C. petrosa.* In Italy it is local, for in the Apennines its extension eastwards is again barred by *C. saxatilis*, and it becomes rare in the southern provinces; and in Sicily, again, *C. saxatilis* is the only indigenous Partridge. In the Balearic Islands; in Elba; and in Corsica, the Red-legged Partridge is the only representative of the group; but in Sardinia its place is occupied by *C. petrosa*, the only Partridge found in Northern Africa, and which, in its turn, has never been proved to migrate even to the mainland of Europe. At the present day the Red-legged Partridge occurs in the Azores and in Madeira, but there can hardly be a doubt that it was introduced there by the Portuguese settlers in the same way as *C. chukar* of India was carried to St. Helena.

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* A hybrid between these two species was described by M. Bouteille (Orn. du Dauphiné, ii. p. 337) under the name of *Perdix labatiei.*

Red-legged Partridges scrape together a slight nest of dried grass and leaves upon the ground, among growing corn, grass, or clover; and two or three instances are recorded in which nests with eggs were found in the thatch, or upon the top of low stacks. The eggs are from fifteen to eighteen in number, of a reddish-yellow white, spotted and speckled with reddish-brown, measuring 1·6 by 1·25 in. Professor Newton remarks that this species begins to lay its eggs earlier than the Common Partridge, but it has a habit of dropping its first eggs about in a desultory manner, so that it is no great gainer by making an early beginning. The young, like those of our Common Partridge, soon quit the nest after they are released from the egg-shell. They feed also, like other Partridges, on seeds, grain, and insects; they frequent turnip-fields, but appear to prefer heaths, commons, and other waste land, interspersed with bushes.

As an object of pursuit they are not esteemed by sportsmen, for being stronger on the wing than the Common Partridge, they are usually much more wild, and accordingly more difficult to get shots at within distance. They foot away before a pointer like an old cock Pheasant; and unless the sportsman can drive them into furze, or some other such thick bottom, through which they cannot thread their way, but little chance of success attends him. For these reasons they have been in many places destroyed as vermin, but under the modern system of "driving" sportsmen are enabled to give a better account of them, and the strong abhorrence entertained for them has somewhat abated. When wounded, they will run to ground in a rabbit-burrow, or any other hole they can find. Occasionally they perch in trees, and have been seen on the upper bar of a gate, or the top of a lift of paling.

The flesh of the Red-legged Partridge is white, but rather more dry, and in this country it is not so much in request as that of our own bird, although on the Continent it is generally preferred. The Red-legged bird has been known to breed in confinement, and hybrids between it and the Grey Partridge are on record. Mr. Stevenson mentions one killed at Holverstone in 1850, and Temminck cites another.

The adult male has the beak red; from the nostrils a black streak passes to the eye, and, recommencing behind the eye passes downwards and then forwards, joining in front, forming a gorget of black, from which, both on the sides of the neck and in the front, numerous black streaks and spots descend towards the breast; the irides reddish-orange, eyelids vermilion red; top of the head with a line of white before and behind the eye; back of the neck, the shoulders, back, wing-coverts, rump, and upper tail-coverts, hair-brown, wing-feathers umber-brown, with a margin of buff on the outer web; tail-feathers, chestnut; breast, pearl-grey; belly, vent, and under-tail coverts, fawn-colour; feathers of the sides, flanks, and thighs, transversely barred with pearl-grey, white, black, and fawn-colour; legs and toes red, the former with a blunt rounded knob in the situation of a spur; the claws brown.

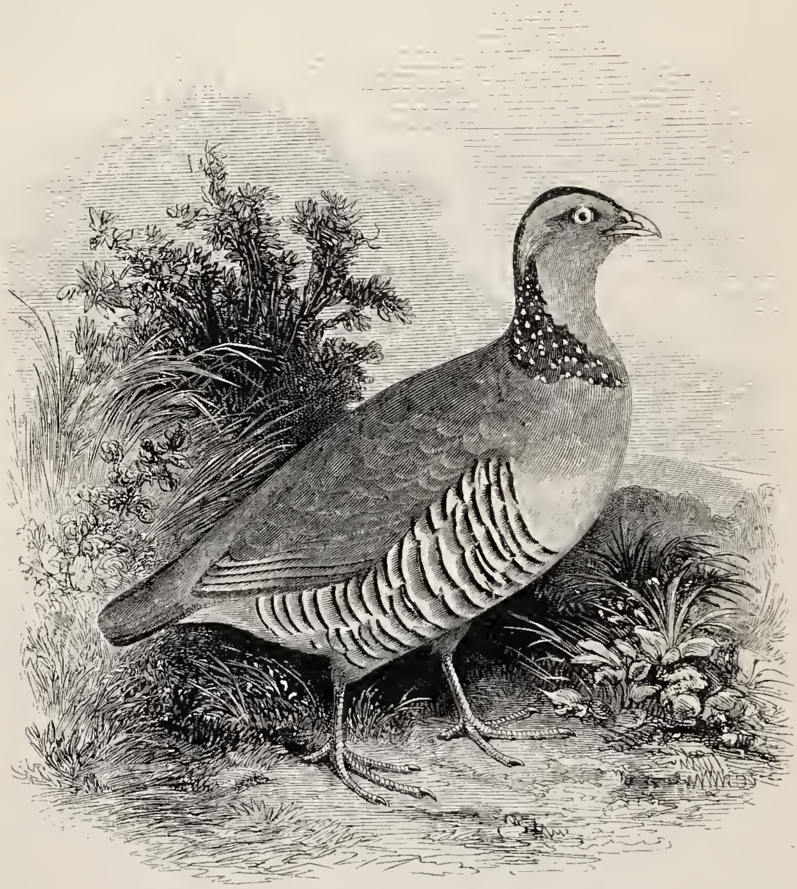
The whole length is thirteen inches and a half. From the carpal joint to the end of the wing, six and a quarter inches.

The female is rather smaller than the male: her plumage is not quite so bright in colour, and she has no rounded spur-like knob on the legs.

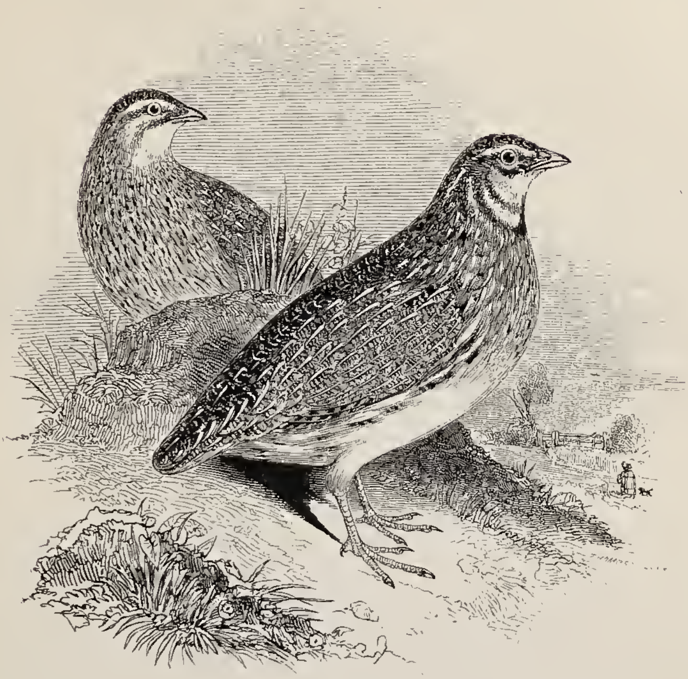
White or pied varieties of this species are sometimes met with. M. A. Lacroix, in his 'Oiseaux des Pyrénées Françaises,' has given an illustration of an example with a white breast-band, obtained in the Haute Garonne in November, 1872; and similar varieties were captured at the same season in the years 1873 and 1874.

The Red-legged Partridge has afforded a remarkable illustration of the manner in which birds may aid in the dispersion of seeds. On December 3rd, 1860, an example which had one foot and leg imbedded in a hard lump of earth, outside which two toes only were visible, came under the notice of Mr. H. Stevenson, and was exhibited, described, and figured by Prof. Newton (P. Z. S., 1863, p. 127). The latter forwarded the encrusted limb to the late Mr. Darwin, who had, in his 'Origin of Species,' alluded to the possibility of seeds being contained and transported in similar lumps; and the following are the remarks of that distinguished naturalist: "I have examined the Partridge's leg; the toes and tarsus were frightfully diseased, enlarged, and indurated. There were no concentric layers in the ball of earth, but I cannot doubt that it had become slowly aggregated, probably the result of some viscid exudations from the wounded foot. It is remarkable, considering that the ball is three years old, that eighty-two plants have come up from it, twelve being *Monocotyledons*, and seventy *Dicotyledons*, consisting of at least five different plants, perhaps many more." (H. Stevenson, Birds of Norfolk, i. p. 418.)

The Barbary Partridge (*Caccabis petrosa*) was included in former Editions owing to an example having been picked up dead at Edmondthorpe near Melton Mowbray, in April 1842. It passed into the hands of Mr. Thomas Goatley, of Chipping Norton, Oxfordshire, and from it the present figure was drawn. Subsequently another was shot on the estate of the Marquis of Hertford at Sudbourn in Suffolk; and two more Suffolk examples are recorded by Mr. Harting (Handb. Brit. Birds, p. 129) on the authority of Mr. J. H. Gurney, Jun., who considers that these specimens must have been turned down, or their eggs introduced, by game-preservers. Another is mentioned by Mr. Cordeaux (B. of the Humber, p. 81) as killed near Beverley about three years prior to 1872; and Dr. Bullmore (Cornish Fauna, p. 25) cites an example obtained at Killiganoon, Cornwall, in 1865. The restricted natural range and non-migratory habits of this species have already been indicated; and there can be no reasonable doubt that the occurrence of these examples was owing to artificial introduction. Unlike the preceding species, the Barbary Partridge has failed to maintain a footing in this country, and it is therefore omitted from the present Edition, the late Mr. Gould having equally disallowed its claim. The figure of the bird is, however, given below.



Even less can be urged in favour of the insertion of the Virginian Colin (*Ortyx virginianus*), thousands of which have been brought over from North America during the present century, and turned loose, without having succeeded in permanently establishing themselves. This species is therefore omitted from the present Edition.



Coturnix communis, Bonnaterre.*

THE COMMON QUAIL.

Coturnix vulgaris.

Coturnix, *Bonnaterre*†.—Beak strong, shorter than the head, upper mandible curved. Nostrils basal, lateral, half closed by an arched membrane. Wings moderate: the first quill the longest. Tarsi, unarmed. Feet with four toes, those anterior connected by a membrane as far as the first articulation. Tail short, rounded, recumbent, almost hidden by the tail-coverts.

The Quail has generally been considered as a summer-visitor to Great Britain; but so many instances have been recorded of its occurrence in England, and particularly in Ireland, as well as during the winter months, as to make it clear that a portion of them do not return southward in autumn. Early in February, 1844, I saw six Quails at a poulterer's shop in London, which had been sent up from Cambridgeshire, and as these birds had no wound about them, I had no doubt they had been caught by fowlers when drawing nets for Larks. Of these six, three were females. Mr. H. T. Frere (Zoologist, p. 871) refers to the late appearance of Quails in Oxfordshire in the following terms :—"In consequence of some fields of corn remaining in this part of England, still standing in December, 1844, Quails did not leave us till very late. After several days of severe frost, I heard of a pair having been seen in a field, in the parish of Hornsey, near this town. I cannot remember the exact date, but it was some time in December ; and in the last week in November, I saw a pair in this market, where they have been more plentiful than usual this autumn, which had been killed down in the fens. The birds seen at Hornsey had not been driven away by intense frost, which, curious to say, prevailed while the barley where they lay was being carried." In the winter of 1847, and again in December 1865 and January 1866, Quails were obtained in several localities of the east and north-east of England. The majority, however, arrive in this country in May, and seem more partial to open champaign countries than to those which are enclosed.

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* Tableau Encyclopéd. et Méthod., i. p. 217 (1790). † *loc. cit.*

Sparingly distributed throughout the country, there are few districts in which Quails have not at one time or another been recorded as breeding; and few also in which their appearance can be counted upon either with regularity or in anything like average numbers. In some parts of Cornwall a good many are bred, the year 1870 having proved unusually favourable for hatching; and about Bridgewater in Somersetshire, a fair number nest annually. In other parts of the west they appear to be uncommon, at least beyond Breconshire and Cheshire; but eastward they are to be found scattered about most, if not all, of the southern and midland counties. At one time Quails were far more partial than they are at present to Hertford, Cambridgeshire, and the fen-district; and in Norfolk, and also in Lincolnshire, they are far less abundant than in former years, when drainage and high cultivation had not yet broken up the coarse, tussocky, unimproved land in which they delighted. In the Holderness district of Eastern Yorkshire they breed annually in small numbers, and, although local, their nests have been found in Durham and Northumberland. Northwards, the eastern coast of Scotland is less suitable to their requirements; and except in the Lowlands, to the south of the Friths of the Forth and the Clyde, Quails are rare, although nests have been found in the east of Sutherland and in Caithness. The milder west coast offers greater attractions, especially the counties of Kirkcudbright, Wigton, and Ayr; and Quails have even bred so far west as the islands of Lewis and North Uist in the Outer Hebrides. Mr. J. H. Dunn obtained a nest containing eleven eggs on the 4th October, 1851, near Stromness in the Orkneys; and Dr. Saxby records the finding of one with ten eggs on the 25th September, 1868, at Burrafirth in Unst, the most northern island of the Shetland group,—but the extension of range in this north-eastern direction is not so remarkable, seeing that the summer-visits of this species extend to the Færoes. In Ireland Quails are both more generally distributed than in Great Britain, and a far larger number remain throughout the winter, especially in the south and south-western districts, where frost is seldom felt; the north-eastern portion being, apparently, preferred during the breeding-season.

A summer-visitant in no great abundance to Scandinavia and Northern Russia up to about 65° N. lat., this species becomes more common in Denmark and Northern Germany; and from thence southwards Quails are numerous, especially on migration, throughout the remainder of the Continent. Their extreme western limit is at the Azores,* where, according to Mr. Godman, they are resident and not migratory, breeding twice and even three times in the year; and Dr. Bolle says substantially the same of those found in the Canaries. These resident birds are small in size, and the males generally have a red throat, with only a slight trace of the dark central patch; the flank-feathers are also more distinctly marbled with brown than ordinary and migrating examples. Naturally they occur on the intermediate island of Madeira. It is, however, on the shores of the Mediterranean that their amazing numbers are most noticeable; the vernal migration being the largest in some localities, whilst in others the spring arrivals preponderate in numbers. In the south of Spain, especially near Málaga, where the cotton which is cultivated affords excellent cover, Quails remain in some numbers throughout the winter. These resident birds, which are as a rule dark in plumage, are termed "codornices castellanas" by the natives, whilst the spring-arrivals, many of which are somewhat smaller and lighter-coloured, are called "moriscas," "africanas," and, according to Colonel Irby, "criollas." The latter arrive in March and April; the return migration taking place towards the end of September. Vast numbers cross from Africa to Italy by way of Pantellaria, Malta, and Sicily, arriving in the spring during the night, whereas in autumn they generally pass during the hours of daylight.* The migration is equally general to the eastward, and in Palestine, during the months of March and April, the Quails come up in the night and cover the land. On the African side of the Mediterranean the species necessarily occurs on migration along the whole line; many examples remaining to breed in the Cisatlantean provinces; whilst by the latter part of August a great number have already returned through that great continent and reached the Cape of Good Hope. The course of their migration is more clearly traceable by way of the Cape de Verde, and along the western side, than in any other direction; but there are probably several main lines, for Quails are widely distributed in the Transvaal, and they occur both in Madagascar and Mauritius.

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* Large numbers have been turned out in America, especially in the State of Vermont, where, in 1877, a flourishing stock of 6,000 birds had been secured. (J. E. Harting, 'Zool.,' 1878, p. 390.)

Eastward of Asia Minor this migratory species occurs in Turkestan and Persia, and breeds regularly in Cashmere, descending in the cold weather to the plains of India, where it is termed by sportsmen the "Grey" Quail, to distinguish it from its smaller congener the Black-breasted or "Rain" Quail, *C. coromandelica.* A few nest in the Northern and North-western Provinces, but the majority leave on the approach of the hot weather. Its occurrence in Ceylon is suspected but not yet proved. On its migrations it was obtained by Severtzoff crossing the Pamir or "Dome of the World"; Dr. Henderson obtained a specimen alive on 24th September at an elevation of 13,500 feet, and several were heard by Dr. Scully calling in the fields about Yarkand. In Siberia its northern range is difficult to trace, but it certainly extends throughout the temperate regions as far as Dauria; and thence to Japan. In the latter large numbers are resident, but some authorities consider the Japanese form to be distinct: even the note being said to be different. It resembles the resident Azores bird in being small, and in the male having a rufous throat, without, as a rule, any trace of a black central patch; moreover, the marbling on the flank-feathers is so extremely bright and defined as to give an appearance of spots. In China, the ordinary form occurs on migration, and it also visits the island of Formosa, in which, however, there is a resident form similar to the Japanese, and even more like the Azores bird. The development of a red throat, well-defined coloration and small size, seem, in fact, to be characteristic of these island forms. Very dark varieties are also frequently met with; a shade of plumage which is probably due to hemp, or some other food similar in its effects.*

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* C. A. Wright, 'Ibis,' 1864, p. 138.

Enormous numbers of Quail are netted on the Continent, especially on the spring migration, and most people must be familiar with the long cloth-covered cages, with a feeding-trough in front, exposed in the shops of the principal poulterers. The greater portion of these are males, which are the first to arrive, and advantage is taken of this circumstance by the bird-catchers, who decoy hundreds into their nets by imitating the call-note of the female. It has been stated that in the small island of Capri in the bay of Naples, 160,000 have been netted in a single season, and even larger numbers are on record. On their first arrival they seem much fatigued, and during their passage they have frequently been known to rest upon sailing-vessels. Canon Tristram, in his 'Natural History of the Bible,' pp. 230–233, says that in Algeria, in the month of April, he found the ground covered with Quails for an extent of many acres at daybreak, where on the preceding afternoon there had not been one, and they scarcely moved until almost trodden on; and in Palestine he caught several with his hand; one being actually crushed by his horse's foot. The Hebrew name "selav"—in Arabic "salwa"—from a root signifying "to be fat," is very descriptive of the round plump form and fat flesh of the Quail. Canon Tristram considers that the period at which the Quails were brought to the camp of the Israelites was on their northern migration from Africa in April, when, according to their well-known instinct, they would follow up the coast of the Red Sea till they came to its bifurcation with the Sinaitic Peninsula, and then, with a favouring wind, would cross at the narrow part, resting near the shore before proceeding.

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* In 1862 MM. J. Verreaux and O. des Murs described and figured (Rev. et Mag. de Zool. xiv. p. 226, pl. 11) a new species of the purely *Australian* genus *Synœcus* obtained in Lombardy, calling it *S. lodoisiæ!* Degland and Gerbe believed in it, but the Reviewer in 'The Ibis' (1862, p. 380) scouted the idea of the occurrence in Europe of a new species of an Australian genus. In 1868 the Editor had an opportunity of examining the specimen in the collection of Count Turati, at Milan, and he considered it to be merely a dark variety of the Common Quail, a view which was subsequently endorsed by high authority, and finally admitted to be correct by the late J. Verreaux himself.

It has been stated by many writers that the male Quail is polygamous, and at times perhaps he may be so; but, seeing that Quails in early summer are usually found in pairs, and that two adult birds are generally found in attendance on the young brood, it appears probable that he is monogamous.* He is exceedingly pugnacious with regard to others of his own sex; and also remarkably amorous, whence the French proverbial expression, "*Chaud comme caille*," which has nothing whatever to do with any supposed stimulating properties possessed by the flesh of the bird. On arrival, the shrill triple note of the male soon makes itself heard in the evenings, and in this country is onomatopœtically rendered by the words "wet-my-lips"; whilst to the German peasant it says "Buck' den Rück" (Bend your back). In the south of France it is rendered by "J'ai du blé, j'ai pas de sá (sac)," or in Provence by "Tres (trois) per un, tres per un." Every one who has been in Spain, where, in spring, the caged males "sing" all day, and nearly all night long, must be familiar—perhaps too much so—with the castanet-like "click-clic-lic" which perhaps led to the invention of that instrument of music, and obtained for the bird the scientific name of *dactylisonans*. Its call is, however, not strictly dactylic, the emphasis being upon the second syllable. In June in this country, but earlier on the Continent, the female scrapes out a small cavity on the ground, into which she collects a few bits of dry grass, straw, or clover stalks; she lays from seven to twelve eggs; nesting among wheat generally, but sometimes in a piece of clover or grass. The eggs are of a yellowish or dull orange-coloured white, blotched or speckled with umber-brown, measuring 1·1 by ·9 in. Upon these she sits about three weeks; the young are able to follow her soon after they are excluded from the shell, and learn to feed on seeds, grain, insects, and green leaves. Two broods, or *bevies* as they are called, are sometimes reared in the season. Many are found and killed in wheat stubbles by Partridge-shooters in the month of September; they fly quick, but generally straight and low, and are difficult to raise a second time when they have been once flushed and alarmed. The greater portion leave this country in October.

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* Such is the distinctly expressed opinion of such practical observers as Thompson, Macgillivray, Gould, and of many living authorities.

The food of the Quail, judging from about thirty examples shot during winter and early spring, consists, according to Thompson, of the seeds of such weeds as plantain, persicaria, dock, wild vetch, and chickweed; no less than 3,500 seeds of the latter having been found in the crop of a single bird. Another contained remains of eleven of the nutritious slug *Limax agrestis;* and in May the crop of another was found to be distended with seeds of grass mixed with a large number of insects. Seeds of the reed (*Arundo phragmitis*) are also frequently to be met with, and the gizzards of all contain sand and fragments of stone.

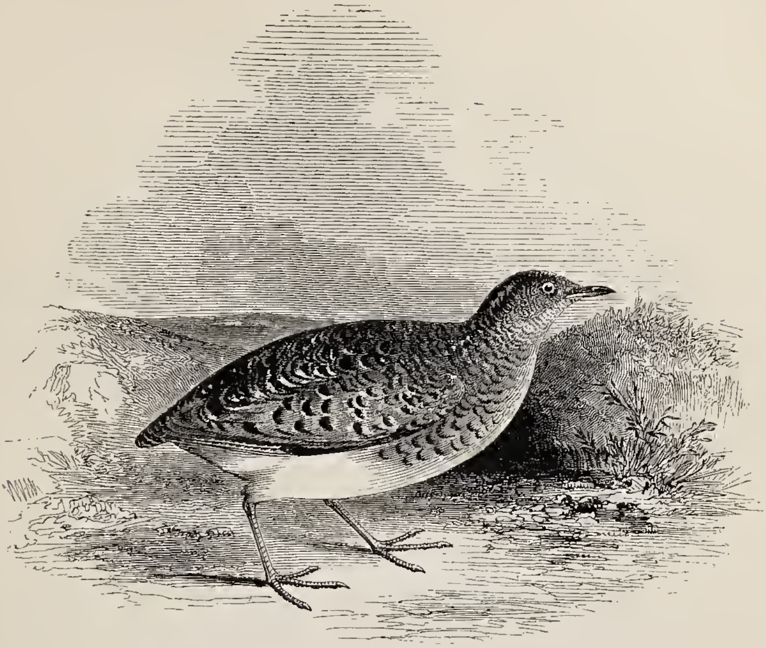
The adult male has the beak brownish-grey; the irides hazel; top of the head dark brown, with a pale wood-brown streak from the base of the beak on each side over the eye and the ear-coverts, and a narrow streak of the same colour over the crown of the head to the nape of the neck; the plumage of the back, wings, rump, and tail, brown, with lighter-coloured shafts and longitudinal streaks of wood-brown; wing-primaries dusky brown, mottled with light brown; chin and throat white, bounded by two half-circular dark brown bands descending from the ear-coverts, and with a black patch at the bottom in front; breast-feathers pale chestnut-brown, with shafts; lower part of the breast, the belly, vent, and under tail-coverts, yellowish-white; flank-feathers barred and mottled with brown on the edges, and broadly streaked with pale buff down the centre; legs, toes, and claws, pale brown.

The whole length is seven inches. The wing from the carpal joint to the end, four inches and a half: the first feather a very little longer than the second, and a quarter of an inch longer than the third; the form of the wing is therefore pointed.

The female has no dark half-circular marks descending down the sides of the neck, nor the black patch in front; but the feathers on her breast are strongly marked with a small dark spot on each side of the light straw-coloured shaft.

The young birds of the year resemble the adult female. The young males do not acquire the black patch on the front of the neck till their second year.

In the illustration which precedes this subject, the figure in the foreground represents the male bird; that behind and a little to the left, the female.



Turnix sylvatica (Desfontaines*).

THE ANDALUSIAN HEMIPODE.

Hemipodius tachydromus.

Turnix, *Bonnaterre*†.—Beak moderate, slender, very compressed; culmen elevated and curved towards the point. Nostrils lateral, linear, longitudinally cleft, partly closed by a membrane. Tarsus rather long. Toes three before, entirely divided; no posterior toe. Tail composed of weak yielding feathers clustered together, and concealed by the feathers of the back. Wings moderate, the first and second quill-feathers nearly equal, and the longest.

The term *Hemipodius*, signifying Half-foot, was applied generically by M. Temminck, in 1815, to several species of quail-like birds, but with three toes only, which, from their very diminutive size were considered the pigmies among the Gallinaceous birds: an order in which they have generally been placed. After the light thrown upon their anatomy by the researches of Professor W. K. Parker (Trans. Z. Soc., vol. v.) and Professor Huxley (P. Z. S., 1868, p. 303), it seems; however, necessary to place them in a distinct order *Hemipodii*, which leads off towards the *Crypturi*, or Tinamous, of South America. One very remarkable feature is that throughout the genus the females are considerably larger than the males. They live mostly in localities covered with scrub, in which they skulk; hiding themselves at the least appearance of danger; seldom taking wing, but running with great speed; and as a rule they are not migratory.

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* *Tetrao sylvaticus*, Desfontaines, Mém. de l'Acad. Roy. des Sc., 1787, p. 500, pl. xiii.

† Tableau Encycl. et Méthod., i. p. 5 (1790).

Of the Andalusian Hemipode it may be said that even in the countries it inhabits, it is extremely local, and has never been proved to wander to any extent. In Europe it occurs in the Alemtejo in the south of Portugal, and along the southern coasts of Spain, especially where the ground is covered with palmetto-scrub (*Chamærops humilis*), as in the neighbourhood of Gibraltar, and of Algesiras in the direction of Vejer, and also about Málaga where the country is of a similar character. It is not again met with in Europe until Sicily is reached, when it is found in considerable abundance along the south-western side of that island, very seldom straggling even so far as the vicinity of Palermo: never migrating, nor being known to visit either Malta on the one side, or the mainland of Italy on the other. It does not occur on any other island of the Mediterranean, nor has it been proved to have straggled even to the southern shores of France. In North Africa it is found in suitable localities in Morocco from Mogador to Tangiers, and thence through Algeria, Tunis, and Tripoli as far as the confines of Egypt, beyond which it cannot be traced with certainty. It is in fact restricted to certain localities of a peculiar physical character in Southern Europe and Northern Africa; and few birds would be less likely to have voluntarily visited the British Islands. In India and Ceylon this species is represented by *Turnix taigoor*, the 'Bush Quail' of sportsmen, and other members of the genus are found throughout the Ethiopian and Oriental regions down to Australia, where they are especially numerous.

The evidence upon which the Andalusian Hemipode has been included amongst British Birds is contained in the following letter, published in the 'Annals of Natural History,' xiv. p. 459, and addressed to the editors :—

"Gentlemen,—I have recently received a bird which appears to me to be new to this country ; it is a Quail, having no back toe, and is not mentioned, I believe, in any work on British Ornithology to which I have access ; but in Dr. Latham's 'General History' it is described as the *Perdix Gibraltarica*, with which my specimen appears to agree. The bird was shot by the gamekeeper on the Cornwell estate in this county, about three miles from hence, and has been kindly presented to me. It was found in a field of barley, of which kind of grain, by the bye, hundreds of acres are still standing, with no prospect of being harvested in a proper state. Before I proceeded to preserve the bird, I took the measure of its various parts, the colour of its eyes, bill, and feet, its weight, &c., after which I found its description in the work before alluded to. It was shot on the 29th of October last, since which time another has been killed near the same spot by the same person, but its head was shot off, and otherwise so mutilated as to be unfit for preservation : this might probably complete the pair, mine being a male bird. It had in its gizzard two or three husks of barley, several small seeds similar to charlock, some particles of gravel, and was very fat. It was considerably injured by the shot, but I have set it up in the best manner I could, and consider it a valuable addition to my small collection of British Birds. Should this prove to be the only known instance of the capture of the bird in Britain, I shall feel glad in having saved it from oblivion. I am, Gentlemen, your obedient servant,

"THOS. GOATLEY.

"Chipping Norton, Oxon, Nov. 11, 1844."

"[The bird in question is the *Hemipodius tachidromus* of Temminck, which is figured in Mr. Gould's 'Birds of Europe,' vol. iv. plate 264. Mr. Gould, to whom we have shewn Mr. Goatley's letter, considers this one of the most interesting additions to the British Fauna that has occurred for many years.—Ed.]"

This specimen was drawn from and engraved for the present work.

In the 'Proceedings of the Zoological Society' for 1866, p. 210, it is recorded that the late Mr. Gould exhibited a specimen of the Andalusian Hemipode which had been taken near Huddersfield, and which had been sent to him for inspection by the possessor, Mr. Alfred Beaumont. In 'The Birds of Great Britain,' vol. iv., Mr. Gould adds that the specimen was accompanied by the following note:—"The bird was purchased alive by the son of S. D. Mosley, a bird-stuffer of Huddersfield, from two Irishmen, on the 7th of April, 1865, near the Fartown bar on the Bradford Road. He saw it in the hand of one of the men, and thinking it a novelty gave them sixpence for it; the Irishmen regarded it as a young Partridge."

Nothing can be more *circumstantial* than the above statements, and, failing disproof, there seems no alternative but to continue to include this species in the list of British birds.

The earliest information respecting the nesting of the Andalusian Hemipode was given in 'The Ibis' for 1859, p. 80, pl. ii., in which the late Mr. W. C. Hewitson figured two of its eggs, with those of other rarities, brought from Algeria by Canon Tristram, who contributed a note stating that they were taken by Captain Loche of the French army in Kobah Forest, on July 11th, 1857. The nest was said to have contained seven eggs, nearly fresh, and was placed on the ground in the midst of a dense thicket of underwood. Colonel Irby* says that owing to the skulking habits of the birds, the nest is exceedingly difficult to obtain, but four eggs slightly incubated were brought to him from the neighbourhood of San Roque on the 6th July, 1869; the nest being described by the finder as consisting of a few bits of dried grass placed under the shelter of a palmetto bush. Another nest, found by Capt. Savile G. Reid, R.E., on the 19th May, 1873, was placed in grass near the shore, and also contained four incubated eggs, as did another obtained near Tangier by Olcese; Favier also says that they lay four eggs, and that number appears to be the usual complement. Col. Irby has also received eggs from Mogador. Loche says that the old females lay in May, and again in August: the younger ones in June and September; young broods being sometimes found in the latter month. The eggs are of a dirty-white colour, thickly blotched with purplish-grey and brown, very similar to those of the Pratincole, but smaller; their average measurement being about 1 by ·8 in. The structure of the shell is very different from that of the egg of a Quail.

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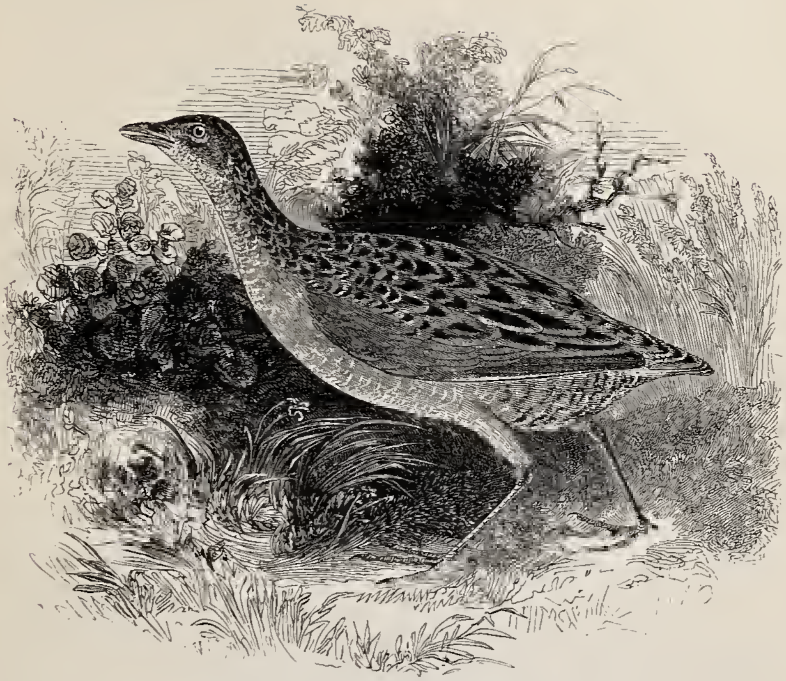
* Ornithology of the Straits of Gibraltar, p. 141.

The male is monogamous, and takes part in the duties of incubation and of attending to the young, which are able to run as soon as they are hatched. Their natural food consists of insects and seeds of wild leguminous and other plants, especially those of the broom; and the stomachs of those examined by the Editor have also contained a large proportion of minute stones. In captivity they feed on wheat, millet, chopped lettuce, very small snails, and broken sugar; but the greatest attractions, says Loche, were meal-worms and flies, which they soon learned to take from the hand. An adult male became tame almost immediately, but a wounded female sulked for some time, only yielding to the temptation of meal-worms. Subsequently both would allow themselves to be caressed, and made no attempts to escape; but Loche could never succeed in rearing the young ones captured from time to time. A female, deprived of the male, laid more than fifty eggs between March 3rd and October 16th. These were deposited on two consecutive days; after an interval of three days a third was laid, and again, after two or three days, a fourth; then came a pause of seven or eight days, and laying under similar conditions was recommenced. A pair of birds subsequently hatched out and reared a brood of four young ones, which, as soon as they became thoroughly independent, separated from their parents and lived together; whilst the old birds had just begun to breed again, when they fell victims to an accident.

The usual note of the old birds when calling to their young is a *crrou, crrou, crrou,* but at daybreak and towards sunset the male, and sometimes the female, utters a mournful sound similar to the "booming" of the Bittern. This is well known to the Andalusian peasant, and has procured for the bird its name of *Torillo,* or "little bull."

The adult female, which is considerably larger than the male, has the bill horn-coloured, lighter at the angle of the under mandible; iris pale hazel; top of the head mottled-brown with a central buff streak descending to the nape; the cheeks pale buff, barred with black; the feathers of the upper parts rufous-brown, thickly covered with blackish bars, and margined with pale buff; wing-coverts spotted with black, chestnut, and buffy-white; quill-feathers dull brown, with a light-coloured line along the edge of the outer web; chin white; throat and upper breast pale chestnut, passing into buffy-white on the abdomen; sides of the breast and flanks spotted with black and brown on a buff ground; under tail-coverts chestnut; legs light brown. Total length about eight inches; from the carpal joint to the tips of the first and second primaries, which are the longest in the wing, three inches and a half.

An adult male obtained at Málaga on the 23rd of September, 1872, had the testes largely developed, although the plumage was in partial moult. The markings resemble those of the female, but the general tone of the upper parts was much greyer, and the chestnut of the under parts less vivid. Total length six inches and three-quarters; wing three inches.



Crex pratensis, Bechstein.*

THE LAND RAIL,

OR CORN CRAKE.

Crex pratensis.

Crex, *Bechstein* †.—Bill shorter than the head, thick at the base, subcultrated, compressed; the culmen gradually deflecting from the forehead to the point of the bill; lateral furrow of the upper mandible broad, and occupying more than half its length; angle of the under mandible bending upwards; both mandibles of an equal length. Nostrils concave, lateral, linear, ovoid, pierced in a membrane occupying the mandibular furrow in the middle of the bill. Wings armed with a spine, and having the second and third quill-feather the longest. Legs strong, of moderate length, with the lower part of the tibiæ naked. Feet four-toed, three before, one behind. Toes long, slender, and cleft to their base, without any lateral membrane; hind toe resting almost wholly on the ground. Claws arcuate, compressed, and sharp-pointed.

The Land Rail is a summer visitor to this country, generally making its appearance in the southern counties during the last ten days of April; but in Yorkshire, and still further north, it is seldom observed or heard till the first or second week in May. In the Shetland Islands it only makes its appearance towards the end of that month, the herbage even then being too scanty to afford the requisite concealment. Generally distributed throughout the mainland of Scotland, it also goes to the most outlying of the Hebrides: even to the remote St. Kilda. In Ireland, where a large portion of the country is under pasture, it is fairly abundant. The rich meadows upon the banks of the Trent below Newark: the Vale of Purbeck: the neighbourhood of Battle in Sussex: and the Island of Anglesey, have each been noted for the abundance of this species; and in Devonshire, the Rev. Robert Holdsworth has stated that he was present at the killing of as many as thirteen couple in a single day in September, at which season Land Rails congregate before leaving the country. In the neighbourhood of Selborne, in Gilbert White's time, it was so rare that seldom more than one or two were seen in a season, and then only in autumn, but owing probably to the clearing of the forest, and the increase of pasture land, this is no longer the case, for Mr. J. E. Harting states, in an editorial note to his edition of 'White's History of Selborne' (p. 328), that he has killed three brace in a September day. By the beginning of October the majority have taken their departure, but numerous instances are on record of occurrences both in England and Ireland in November and December, and sometimes even in January and February. Sir R. Payne-Gallwey states ('The Fowler in Ireland,' p. 251) that he has twice found Land Rails, to all appearance asleep, in the latter month, ensconced in the centre of loose stone walls close to the ground; and Mr. Reeves, of Capard, Queen's Co., has stated that he took three in a semi-comatose state out of a rabbit-hole on 7th February, 1882, and others in the same manner in former years. Land Rails have also been shot in mistake for Woodcocks in winter, especially on the promontories of the west coast of Ireland.

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* Ornithologisches Taschenbuch, ii. p. 337 (1803).

† *tom. cit.* p. 336.

A summer visitor in small numbers to the Færoes, the Land Rail occurs at that season in Norway up to the Arctic circle, and, more locally, in Sweden. Rare in summer at Archangel, it is generally distributed over Russia south of the Baltic, and throughout Central Europe, especially at the seasons of migration: breeding in suitable localities; but in Southern France, the Spanish Peninsula, the islands of the Mediterranean, Italy south of Venetia, Greece, and Southern Russia, it is principally, if not entirely, a bird of passage.* Beyond the Mediterranean it is to some extent a resident throughout the winter; but numbers of Land Rails continue their migrations across and along the coasts of Africa down to Natal, where, according to Mr. Ayres, they are at times abundant; and occasionally to Cape Colony. Mr. Vernon Harcourt enumerates this species among the birds of Madeira, and Mr. F. D. Godman was shown examples obtained in the Azores. East of the Mediterranean, it appears to be resident in Asia Minor, and, according to Canon Tristram, in Palestine: ranging through Persia to Afghanistan and Kashmir. Severtzoff states that it breeds in Turkestan, and it occurs in Siberia as far as the Lena; but is not recorded from China or Japan.

The Land Rail is a very rare straggler to Iceland, and a single example was obtained near Godthaab, Greenland, in 1851. Professor Baird states that several have occurred on the eastern coasts of the United States, and a solitary individual was shot in the Bermudas in October, 1847. In these distant migrations both this and other species probably avail themselves of the spars and rigging of passing vessels on which they can repose unobserved at night, and not unfrequently even by day. Mr. Gould relates that, on his outward voyage to America, a Land Rail rested on the ship when more than two hundred miles from the coast of Ireland; and similar cases are doubtless far from uncommon.

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* In the south of France the peasants call the Land Rail "roi des cailles," and in Spain it is known by the name of "guion de las codornices," owing to an idea that it places itself at the head of the Quails, and precedes them on their migrations.

The Land Rail frequents the long grass of meadows near rivers, beds of osiers, and fields of green corn and clover, where its presence is indicated by its creaking note; and hence one of its names, that of Corn Crake, or Corn Creak, by which latter term it is also known in Ireland. This call-note may be imitated by passing the edge of the thumb-nail, or a piece of wood, briskly along the line of the points of the teeth of a small comb; and so similar is the sound, that the bird may be decoyed by it within a very short distance. The male bird is said to be the caller, and he continues the note until a mate be found and incubation commenced; after which he is less frequently heard, although not uncommonly on summer evenings in June, July, and, according to Thompson, occasionally in August. A Land Rail, kept some time in confinement, uttered besides a low guttural sound when alarmed or disturbed. This bird has been credited with ventriloquial powers, but it may be doubted whether this is not in consequence of the marvellous rapidity with which it sneaks, unperceived, from one spot to another. The Editor has had ocular proof that notes which were supposed to indicate ventriloquism were in reality the responsive utterances of two individuals.*

The food of the Land Rail consists of worms, slugs, snails, small lizards and insects, with portions of vegetable matter and a few seeds. The nest is formed, on the ground, of dry plants; and a field of thick grass, clover, or green corn, is generally the situation chosen: the eggs, from seven to ten in number, are usually produced in the early part of June; they are of a pale reddish-white, spotted and speckled with ash-grey and pale red-brown, and measure about 1·5 by 1 in. Daniel says, that in 1808, as some men were mowing grass upon a little island belonging to the fishing water of Low Bells on Tweed, they cut the head from a Corn Crake that was sitting upon eleven eggs: about twenty yards from this spot, they had nearly destroyed a Partridge in a similar way, which was sitting upon eighteen eggs; but, observing her, the mowers took the eggs from the nest of the Corn Crake and put them into that of the Partridge. Two days after she brought out the whole brood, which were seen running about the island. The Partridge catered for them all, and was observed to gather her numerous family under her wings without any distinction.

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* An old North-country name for the Land Rail is the "Daker-hen." Mr. Cordeaux suggests that it may have reference to the apparently uncertain advance of the bird as expressed in the ventriloquous call-notes; whilst Mr. Harting inclines to trace its origin to the Scandinavian *Ager höne—i.e.*, "field-hen," the initial *D* being a corrupt abbreviation of "the:" giving "t' acre-hen" for "the acre-hen." (Zool. 1883, p. 229.)

During the early part of the Partridge-shooting season in this country, many Land Rails are killed by sportsmen, who, after the barley is cut, find them most frequently in seed clover. This bird does not take wing very readily, and flies but slowly, with its legs hanging down, seldom going farther than the nearest hedge, or other covert, in which it can hide itself; and is rarely flushed a second time. When closely pressed, and especially if wounded, it will even elude a dog by fluttering or climbing into the tangled branches.

Land Rails are considered most delicate as articles of food. Dr. Thomas Muffet, who flourished in the reign of Queen Elizabeth, writes of them:—"Railes of the land deserve to be placed next the Partridg, for their flesh is as good as their feeding good, and they are not without cause preferred to Noblemens Tables"; and Drayton speaks of

> "The Rayle, that seldom comes but upon rich men's spits."*

The usual weight of a Land Rail is about six ounces; but examples weighing eight, and eight and a half ounces are on record; and the heaviest of eleven birds shot in May, 1857, near Surlingham, in Norfolk, even attained to nearly nine ounces: the others averaging eight.†

Mr. Jesse, in his remarks on this bird, says, "I have met with an incident in the Natural History of the Corn

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* Poly-olbion, 25th Song, line 338.

† Stevenson, 'Birds of Norfolk,' ii p. 390.

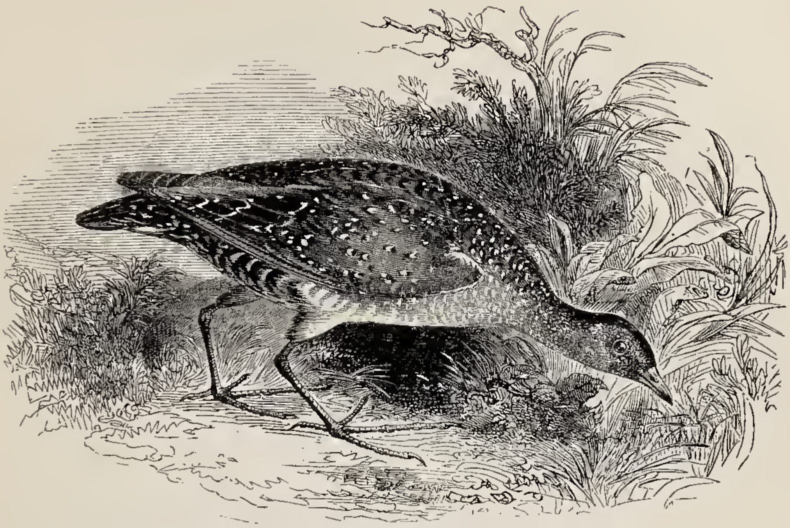
Crake which I believe is perfectly accurate, having been informed that the bird will put on the semblance of death when exposed to danger from which it is unable to escape. The incident was this:—A gentleman had a Corn Crake brought to him by his dog, to all appearance quite dead. As it lay on the ground, he turned it over with his foot, and felt convinced that it was dead. Standing by, however, in silence, he suddenly saw it open an eye. He then took it up; its head fell; its legs hung loose, and it appeared again quite dead. He then put it in his pocket, and before long he felt it all alive, and struggling to escape. He then took it out; it was as lifeless as before. Having laid it again upon the ground and retired to some distance, the bird in about five minutes warily raised its head, looked round, and decamped at full speed."

The beak is pale brown; the irides hazel; over the eye and ear-coverts, and on the cheeks, ash-grey; the head and neck all round, the back, scapulars, and tertials, pale yellowish-brown, each feather having an elongated central streak of very dark brown; tail-coverts and tail-feathers the same; wings and wing-coverts rich reddish-chestnut; quills brown, tinged with red; breast, belly, flanks, and under tail-coverts, pale buff, barred transversely on the sides and flanks with darker reddish-brown; legs, toes, and claws, pale yellowish-brown.

The whole length is rather less than eleven inches. From the carpal joint to the end of the longest feather in the wing, five inches four lines. Females are rather smaller than males, and, as well as young birds of the year, have the ash-grey on the sides of the head less distinct and pure, and the chestnut colour of the wing mixed with darker reddish-brown.

Young Land Rails are at first covered with black down, but soon acquire their first feathers, and, according to Mr. Selby's observation, are able to fly in about six weeks.

Albinos are sometimes met with: one shot near Exeter on 3rd May, is recorded by Mr. D'Urban (Zool. 1881, p. 261) as presented to the Museum of that city.



PORZANA MARUETTA (Leach*).

THE SPOTTED CRAKE.

Crex porzana.

PORZANA, *Vieillot*†.—Beak shorter than the head, slightly higher than broad at the base, compressed, tapering towards the point, nostrils linear and oblong, the nasal groove reaching to the middle of the bill; wings moderate and concave: the second quill the longest; tail short, rounded, the feathers narrow, weak, and slightly curved; tibia bare on the lower part; tarsi short, scutellate in front; toes long and slender; claws long, curved, and acutely tapering.

THIS prettily marked bird is, like the Land Rail last described, a summer visitor to this country. Mr. Lubbock mentions its spring arrival in Norfolk as taking place with great regularity between the 12th and 20th of March; but Mr. H. Stevenson says that of late years he has no record of appearances earlier than the 21st of that month; and a female killed on 23rd March, 1866, at Ludham, was then forward in egg. From the first week in May to the end of that month appears, however, to be the usual time for

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[*] *Ortygometra porzana*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 34 (1816).

[†] Analyse d'une nouv. Ornithologie élémentaire, p. 61 (1816).

fresh eggs; and he has seen the young in their black down taken on Rockland Broad in the last week in July. By the latter part of October, the majority have taken their departure for the South, but stragglers are occasionally met with throughout November and even into December: the marshmen assuring Mr. Stevenson that examples are sometimes found in midwinter. The birds observed thus late in the year being almost invariably in immature plumage, they are probably late broods which have been unable to join the earlier migrants.* Similar instances are on record from other places; one of the latest being, perhaps, the specimen recorded by Mr. Blyth as seen by himself in the London market in the month of January, 1834.

In England the Spotted Crake is more frequently observed in the maritime counties of the south and east coasts, especially in the latter, which still contain fens and "broads" suitable to its requirements. Before the drainage of the fens it was not uncommon in Cambridge and Huntingdonshire, but at the present day its numbers are greatly diminished, even in Norfolk, owing to the reclamation of the marshes. Although local, it is said by Mr. Cordeaux to be not uncommon in some parts of the Humber district, and also of the Trent; and it is not rare in Yorkshire, especially in winter: a few nesting regularly on the sedgy banks of the Hull near Beverley, and, at times, near York and Doncaster.† Notwithstanding the drainage of Prestwick Car, Mr. Hancock records it as still breeding occasionally in Durham and Northumberland. On the western side it appears to be very local, but several pairs breed in the bogs of Breconshire (E. C. Phillips, Zool. 1882, p. 219); and from Wales it ranges up to Cumberland. On the eastern side of Scotland it has been frequently obtained as far north as Elgin, where the nest has been taken, as well as in Aberdeen and Perthshire, so that it doubtless breeds sporadically in the more southern counties; but on the west it has not as yet been recorded beyond the Firth of Clyde. In the Orkney Islands, according to Messrs. Baikie and Heddle, it has been observed, though rarely, on Sanda; and quite recently it has been recorded from the Shetlands (Zool. 1882, p. 21). In Ireland it appears to be an occasional summer visitant, probably more common than is supposed: nests having been found in Roscommon, and a nestling in Kerry.

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* Birds of Norfolk, ii. p. 393.

† Clarke, Handbk. Yorkshire Vertebrates, p. 65.

Although the Spotted Crake has twice been obtained in Greenland,* it has not as yet been recorded from Iceland, or the Færoes. It breeds sparingly in the southern districts of Scandinavia and of Finland, and Messrs. Alston and Harvie-Brown obtained both adults and young near Archangel. Throughout Russia, Poland, Germany, Denmark, Holland, and Belgium, it is abundant in suitable localities during the summer months; visiting Heligoland on both migrations, although more abundantly in that of May. Numerous in the marshy districts of France, especially those of Grenoble, the Camargue, and the Landes, it visits Switzerland, principally on migration, and breeds in the swampy districts of Italy and Sicily. In the Spanish Peninsula it chiefly occurs on migration or in winter; but in the other countries bordering on the Mediterranean it is in a great measure a resident. In Southern Germany, and Southern Russia as far as the Caucasus, it is not uncommon. It has been obtained in the Canary Islands, and it appears to be a resident or a winter visitant along the whole line of Northern Africa as far south as Abyssinia, beyond which it has not yet been recorded.

It winters in Asia Minor, and breeds occasionally in Turkestan, crossing the Karakoram range at an elevation of 16,000 feet, where Dr. Henderson obtained it in September on its passage southwards to India; and Dr. Scully found that a few pairs bred about Gilgit (Ibis, 1881, p. 590). In Eastern Siberia, China, or Japan it has not been discovered by recent travellers.

Compared with the Land Rail, the Spotted Rail is much less numerous as a species, and more aquatic in its habits;

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* Reinhardt, 'Ibis,' 1861, p. 12.

frequenting the sides of streams and lakes which are covered with thick reeds or rushes, among which it conceals itself, and from the security afforded by the dense and luxuriant vegetation of marshy grounds birds are seldom moved without the assistance of a good dog, accustomed to them and their haunts.* In ditches arched over by a tangled growth of brambles, the Editor has seen them climb and flutter up into the branches, and only take wing when pressed by the dog from below, and fairly thrashed out from above. In all these Rails the bodies of the birds are compressed, by which they are enabled to make their way through dense herbage with facility; their toes are also long in proportion to the size of the bird, affording them a firm footing over mud or weeds, from the extent of surface they cover, and enabling them also to swim with ease.

The Spotted Crake breeds in marshes that are overgrown with reeds and sedges; the nest, built on the wet ground, very frequently in a tussock surrounded by water, is formed of coarse aquatic plants, lined with finer materials within. Eight or ten eggs are deposited, of an ochreous ground-colour, spotted and speckled with dark reddish-brown; they measure about 1·3 by ·9 in. The young, which are at first covered with lustrous greenish-black down, take to the water very soon after they are hatched. In the autumn this bird is considered to be in the best condition for the table, and, as an article of food, is in great estimation, particularly in France, where it is considered equal to the Land Rail.

The call-note of this species is a peculiar *whuit, whuit,* generally uttered in the evening. Its food consists of worms, aquatic insects, and slugs, with some soft vegetable substances. One bird, kept by Montagu in confinement, fed on worms, and bread and milk.

In the male, the beak is yellowish-brown, tinged with reddish-yellow at the base; the irides hazel-brown; top of the head hazel-brown, mottled with black in the centre;

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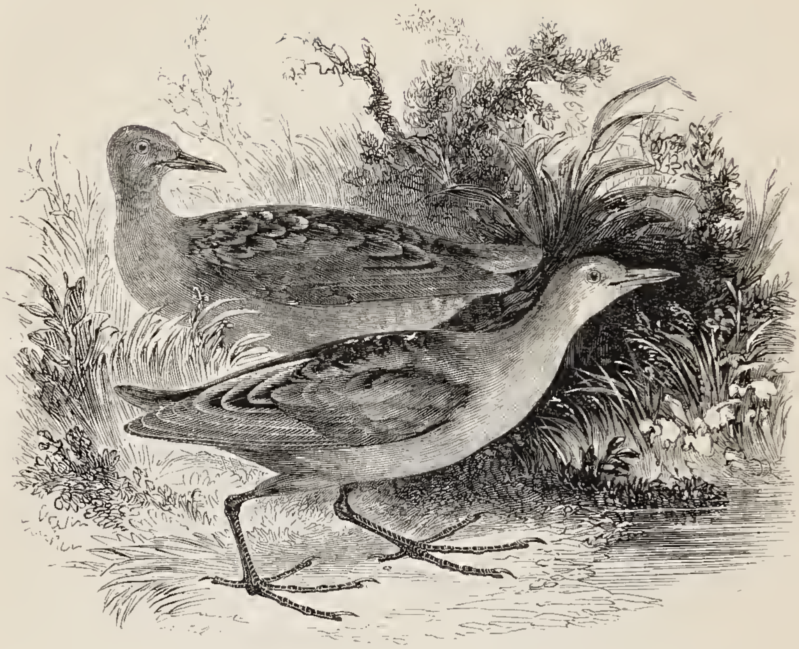
* In the south of Europe this and the other small Rails are familiarly known by the names of *Tue-chien*, *Mata-perros*, *Cansa-perros*, &c., owing to the employment they give to the best of dogs.

slate-colour above the eyes; cheeks, sides and back of the neck olive-brown, spotted with white; back, dark olive-brown, each feather black in the centre, and streaked longitudinally with some narrow lines of white; rump, upper tail-coverts, and tail-feathers black in the middle, margined with clove-brown, and spotted with white; wing-coverts olive-brown, spotted with white; quill-feathers dark brown, with a white streak to the outer web of the first, and faint white mottlings on that of the second; tertials transversely streaked with narrow lines of white; chin, slate-brown; neck and breast dull brown, spotted with white; belly and vent dirty white; under tail-coverts buff; sides, flanks, and under wing-coverts, greyish-brown, barred with white; legs and toes yellowish-green; the claws brown.

The female is slightly smaller, and duller in colour. The young have the sides of the head, the throat, and the abdomen much marked with white, and the spots are smaller and less defined, on a generally duller ground. The whole length of an adult bird is about nine inches. From the carpal joint to the end of the longest quill-feather four inches and a half.

A variety in the collection of the late M. Hardy, of Dieppe, had the front portion of the neck suffused with a bright rose-colour.

A specimen of the Carolina Crake (*Porzana carolina*), shot by Mr. H. S. Eyre, in October, 1864, on the banks of the Kennet, near Newbury, Berks, was exhibited at the meeting of the Zoological Society, February 14th, 1865, by Professor Newton, who remarked upon the powers of endurance in their flight of various members of the family *Rallidæ*, and upon the occurrence of this species on a single occasion in Greenland (P. Z. S. 1865, p. 196, and Zool. p. 9540). The adult American representative may be distinguished from the European bird by its black face. On the strength of a single occurrence it seems inexpedient to add this species to the list of British birds.



PORZANA PARVA (Scopoli [*].)

THE LITTLE CRAKE,

OR OLIVACEOUS GALLINULE.

Crex pusilla.

THE first example of this species made known in this country was shot near Ashburton in Devonshire, in 1809, and was figured and described in Montagu's Supplement to his Ornithological Dictionary, under the name of Little Gallinule. It appears to be a female, but the sex was not noted. The next specimen, recorded by Montagu, is Mr. Foljambe's bird, obtained in the shop of a London poulterer, in May, 1812, said to have been received from Norfolk: this is also figured and described under the name of the Olivaceous Gallinule in the Appendix to his Supplement, and is considered to be an adult male. About the same time Mr. Plasted, of Chelsea, obtained a similar bird, shot on the banks of the Thames near that place, and which, after passing into the possession of Mr. Leadbeater, was transferred to the collection of the late Mr. Lombe, who resided near Norwich. The next record, attributed in former Editions to this species, namely, that by Mr. W. Fothergill, in Tr. Linn. Soc. xiv. p. 583, and in Whitaker's Richmondshire, i. p. 416 (1823), is considered by Mr. W. E. Clarke (Hbk. of Yorkshire Vertebrates, p. 64) to apply in all probability to Baillon's Crake. In March, 1826, a female of this species was caught at Barnwell, near Cambridge, which was in the collection of Dr. Thackeray, the Provost of King's College; and the figure of the bird in the front of the illustration here given, as also the description, were taken from this bird, which was most kindly lent me for my use in this work.

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[*] *Rallus parvus*, Scopoli, Ann. i. Hist. Nat. p. 108 (1769).

In the Magazine of Natural History for the year 1829, page 275, it is mentioned that Mr. James Hall caught a specimen of the Olivaceous Gallinule alive in a drain in Ardwick meadows, near Manchester, in the autumn of 1807. In the same work, but for the year 1834, page 53, the late Mr. Hoy has recorded that a Little Gallinule was shot near Yarmouth. Mr. W. Borrer sent me notice that a Little Crake was taken alive on the banks of the Adur, at Beeding chalk-pit, near Shoreham, in October, 1835; and Mr. W. C. Williamson recorded (P. Z. S. 1836, p. 77) that an Olivaceous Gallinule had been killed near Scarborough.

Its occurrence has also been recorded at Seaford in March, 1848 (Zool. p. 2148); near Hastings, in April, 1859 (Zool. p. 6527); near Pevensey, in March, 1862 (Zool. p. 8330); in Somersetshire, in October, 1870 (Zool. s.s. p. 2386)*; in Cornwall (Zool. 1878, p. 214); near Fordinbridge in Hampshire; in Cambridgeshire (Zool. p. 9118)†; in Yorkshire, on three occasions (W. E. Clarke, Yorkshire Verteb. p. 64); and in Oxfordshire, by Messrs. Aplin (B. of Banbury, p. 22).

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* This subsequently proved to be Baillon's Crake: *cf.* Zool. s.s. p. 4334.

† The sternum of this individual was described in the above volume, pp. 9285–9289, by Mr. W. W. Boulton.

In addition to the above, Mr. Stevenson (B. of Norfolk, ii. pp. 396–399), cites no less than twelve authenticated occurrences in the county of Norfolk alone; most of them killed in March, April, and May; one in August; and one seen, but not obtained, in October. Since then another has been obtained in the second week of November, 1882 (Zool. 1882, p. 374). He argues that, judging from the fact that so many specimens have actually been obtained of a bird whose skulking habits and small size renders it so difficult of observation, the Little Crake can hardly be considered as merely an accidental visitor; and he considers that both this species, and Baillon's Crake, may fairly be classed with the birds of passage which, for a time at least, periodically frequent our marshes. In Lincolnshire, again, Mr. Cordeaux states that he flushed one in October, 1870; and the bird is probably, as Mr. Stevenson suggests, a far more regular visitor than is generally supposed.

The authority for the solitary occurrence of the Little Crake in Scotland is Mr. Thomas Edward, of Banff, who states (Zool. p. 6968) that a specimen was found dead at Thornton, on the banks of the Isla, in March, 1852. From Ireland, Canon Tristram (Zool. p. 4298) received a specimen in the flesh, shot at Balbriggan, on the 11th March, 1854; and, more recently, Sir R. Payne-Gallwey records a specimen obtained by Mr. Reeves, shot at Capard, Queen's County, in April, 1871.*

Other examples have, no doubt, been killed in various parts of England, but it must be considered a somewhat rare bird, and, perhaps, is not always clearly distinguished from the species next to be described.†

The Little Crake has occurred in the south of Sweden, and was even found breeding there on the 17th June, 1862;‡ but it is more common in Denmark. In Northern Germany it has been ascertained to breed in Holstein, Mecklenburg,

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* 'The Fowler in Ireland,' p. 252.

† For instance, a bird recorded as a Little Crake by Capt. W. H. Hadfield (Zool. p. 5280), as shot by him near Ramsey, Isle of Man, in 1847, is subsequently referred by him to Baillon's Crake (Zool. s.s. p. 3272).

‡ Westerlund, Petermann's Mittheilungen, 1870, p. 374.

Pomerania; and, continuing along the Baltic, in Courland and in Livonia; also, according to Sabanäeff, in the Riazan Government in Central Russia. Elsewhere between these lines it is principally known as a migrant. Its best known breeding quarters appear to be to the southward, in Würtemberg, Bavaria, Bohemia, Silesia, and in fact throughout the Austro-Hungarian Empire, where the localities are suitable. On Heligoland it has once occurred on the spring migration; it is a rare visitant to Holland and Belgium; and its appearances are irregular in the north of France, whilst in the south, and especially about Grenoble, and the Bouches du Rhone, it breeds in some numbers. In Spain it has not yet been proved to nest, but it occurs in tolerable abundance in the neighbourhood of Valencia, Murcia, and Malaga; on the spring migration at the two former, and on the autumn passage at the latter. An occasional breeder in Savoy and Switzerland, it nests in Italy down to Sicily, but in the islands and on the coasts of the Mediterranean it mainly occurs on passage, and it appears to winter in Greece. Seldom observed in Turkey, it breeds plentifully in South Russia, and is not uncommon in the Caucasus; eastward it occurs in Armenia, Turkestan, and as far as the broads or 'dhunds' of Sind, to the west of the Indus, beyond which Mr. Hume thinks that its place is taken by Baillon's Crake. He was assured by his boatmen that the Little Crake bred in Sind, but he considers that this requires confirmation.* The species recorded under this name by Mr. Hodgson, as found in Nepaul, and by Temminck, from Japan, appears to be Baillon's Crake, and up to the present the most eastern authenticated locality for the Little Crake is Gilgit, where Dr. Scully obtained three examples on passage between 5th October and 2nd November.†

In Africa it is not as yet recorded from Morocco, but Loche says that it is resident in Algeria, and recently Mr. Dixon shot a specimen from a small pool at Biskra, where it was evidently breeding (Ibis, 1882, p. 578). Beyond this point its African range is unknown.

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* Game Birds of India, ii. p. 209.

† Ibis, 1881, p. 590.

In its food and general habits this Olivaceous Crake resembles the Spotted and other Crakes, but, according to Mr. Hume's experience, its tastes are more exclusively insectivorous than those of Baillon's Crake. The same observer states that he never flushed birds of this species from sedge or reed, but found them running about over, or swimming from leaf to leaf of the lotus and water-lily, exhibiting far less timidity than the smaller species. He also saw one bird voluntarily diving several times, apparently in search of food, and not for safety.

Naumann says that the Little Crake is more partial to open patches of water than Baillon's Crake, and will even boldly show itself, uttering its loud defiant call-note, *kik, kik, kik.* Dr. Kutter, who found several nests of this species on a pond near Cottbus, Nieder-Lausitz, describes one as well concealed, rather flat in form, carefully constructed of dry flag-leaves, and raised about a foot above the surface of the water; a second, rather rudely built on dead aquatic herbage, was only a few inches from the water; whilst a third was composed of dry sedge-grass.* The eggs appear to be seven or eight in number, of an oval form, rather larger and paler than those of Baillon's Crake: light-olive brown in colour, flecked with darker brown, and measuring about 1·1 by ·85 in.

In the adult male the beak is green, but red at the base; the irides red; top of the head, back of the neck, and upper surface of the body generally, olive-brown; the centre of the back broadly flecked with black, with a very few white marks, but no white marks on the wing-coverts or quill-feathers; the primaries dark clove-brown on both webs (without any white outer margin to the first, as in *P. bailloni*); the tertials dark brownish-black in the centre, with broad olivaceous margins; upper tail-coverts and tail-feathers dark brown; the chin grey; sides of the head, the neck in front, the breast and belly, uniform slate-grey; the feathers of the flanks dark brown; those of the thighs, vent, and the under tail-coverts slate-grey, spotted with white; legs and toes green. The whole length is about eight inches. From the carpal joint to the end of the wing four inches and one-eighth; the second and third quill-feathers nearly equal in length, and much longer than the first.

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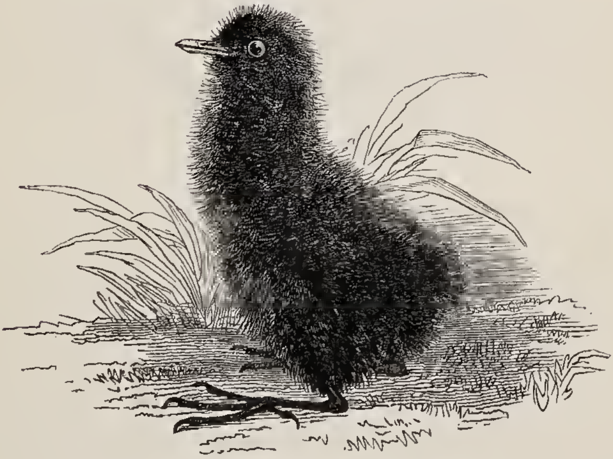
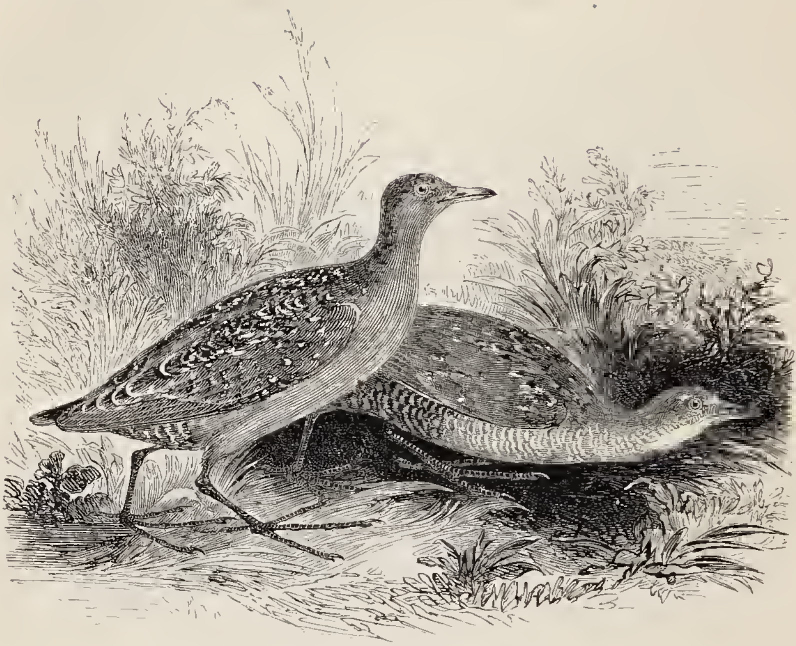
* Journal für Ornithologie, 1865, pp. 334–341.

The female is smaller than the male, and differs in having the space round the eye pearl-grey; top of the head, sides and back of the neck, pale brown; the chin white; the neck in front, breast and belly, fulvous buff colour; flanks and under tail-coverts greyish-brown, with white spots forming bands. The young are still paler on the under parts, and more streaked on the flanks.

The chicks are at first covered with black down. The young bird figured below was presented by Captain Bond.





Porzana bailloni (Vieillot*).

BAILLON'S CRAKE.

Crex Baillonii.

One of the earliest notices of the occurrence of this bird is published in the Zoological Journal, vol. ii. page 279, on the exhibition of a specimen at the Zoological Club of the Linnean Society, which belonged to Dr. Thackeray, the Provost of King's College, Cambridge, and which was caught alive upon some ice at Melbourne, about nine miles south of Cambridge, in January, 1823. In the same Journal, vol. iii. p. 493, Mr. G. T. Fox, of Durham, has recorded another specimen of this bird, which was killed within three miles of Derby, in November, 1821. The next record is of its occurrence near Beccles, and also at Nacton in Suffolk (Tr. Linn. Soc. xv. p. 48). In September, 1840,

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* *Rallus bailloni*, Vieillot, Nouv. Dict. xxviii. p. 548 (1819).

Mr. Francis Edwards, of Brislington, near Bristol, sent up, for the use of this work, an adult female of this species killed on some marshy ground near Weston-super-mare; and two more have occurred in Somersetshire since 1869. Mr. Rodd states (B. of Cornwall, p. 135) that it has occurred at least three times in that county, and it has probably visited at irregular intervals the majority of the southern districts.

It might naturally be expected that this species would be most abundant in Norfolk, but Mr. Stevenson states that he finds the records of its occurrences far more rare than those of the Little Crake. He enumerates three examples shot on Barton Fen, and one at Dilham, originally recorded by the late Mr. Lubbock; one near Yarmouth, on 23rd August, 1842, recorded by and in the possession of Mr. J. H. Gurney; two obtained in October, 1840, and an adult female on 2nd June, 1874 (Zool. s.s. p. 4292). As regards the discovery of the supposed nest and eggs of this bird in Norfolk, in the summer of 1866, which was first announced in the 'Zoologist' for that year (p. 389) by Mr. J. Overend, of Yarmouth, Mr. Stevenson gives the following particulars from further inquiries at the time, and communications received from Mr. R. Upcher, Mr. Crowfoot, and Mr. Frere, of Yarmouth:—"It appears that the four eggs mentioned by Mr. Overend as purchased on the 9th of June, were taken on that day on Heigham Sounds, near Hickling, by a labouring man, who sold them to a lad named John Smith, at Yarmouth, who had been in the habit of collecting eggs for Mr. Crowfoot. The former was of course ignorant as to what they were; but as soon as their rarity was known, it was elicited from the man who took them that he had seen the parent birds near the nest, which was placed in a parcel of reeds growing in water about a foot in depth. It was very small and loosely made, composed of dry rushes. A few days later Smith paid a visit to the spot with the hope of securing the nest, but found that the reeds had been cut and the nest spoiled, and no doubt the man who discovered it was employed in reed-cutting at the time. Five eggs procured on the 7th of July were also taken in the same locality; but of these, unfortunately, three were broken. What became of the nest I cannot say; but the two were most likely constructed by the same pair of birds."* The earliest account of the breeding of this Crake in England is, however, that given by Mr. Sealy (Zool. p. 6329), who describes the finding of two nests in Cambridgeshire, in June and in August, 1858, and some further details are given by Mr. F. Bond in Gould's 'Birds of Great Britain.'

Proceeding northwards, the occurrences of Baillon's Crake become rarer; nevertheless Mr. W. E. Clarke records (Yorkshire Verteb. p. 64) three examples from that county; and Capt. Hadfield mentions it as having visited the Isle of Man. In Scotland, one is stated by Sir William Jardine to have been killed near Lockerbie, Dumfries-shire; and Mr. R. Gray cites another in Caithness. In Ireland, one is recorded by Thompson, as obtained near Youghal, on 30th October, 1845; one has occurred near Kanturk, co. Cork; and a third near Waterford (Zool. 1882, p. 113).

On the Continent its distribution appears to be somewhat irregular, owing probably to insufficient information. In certain districts of Holland it breeds in some numbers; also in many of the marshy parts of France; in a few localities in Switzerland; somewhat capriciously in Germany; and in the Italian provinces of Lombardy, Venetia, and Tuscany. The above countries are frequented from spring to autumn, but in the Spanish Peninsula Baillon's Crake is to a great extent resident, breeding in the marshes of Andalucia and Valencia, where the Little Crake, so far as is known at present, only occurs on migration. A regular visitant to Hungary, the range of Baillon's Crake can be traced to Greece, where it is but little known; and to Southern Russia as far as the Ural, although not included by Bogdanow among the species of the Caucasus; thence, eastward, through Turkestan and Persia, to Gilgit, Kashmir, Nepal, and India, especially the North-West Provinces. Mr. Hume states that it is abundant near Simla up to an elevation of 4,000 feet, and he took a nest near Etawah, finding this species in localities where the Little Crake was not observed. It is recorded by Captain Legge as a rare visitor to Ceylon; Mr. Davison obtained it in the Andaman Islands; and it has occurred on the west coast of Borneo. Passing northwards, it is found in the eastern provinces of China, breeding near Pekin; in Japan; in Southern Siberia; and in Dauria, where Dybowski found it breeding. A straggler to Madeira on migration, Baillon's Crake appears to be scarce in Morocco, although tolerably abundant and partially resident in Algeria; and, again, it is of local distribution in Egypt, although found as far as Khartoum. Dr. Barboza du Bocage has only once received it from Angola, but Andersson found it resident and plentiful in the marshes of Damara Land; Layard obtained it in Cape Colony; it breeds in the Transvaal and Natal; Mr. E. Newton records it from Antananarivo, Madagascar, and Mr. Seebohm has specimens from the centre of that island.

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* Birds of Norfolk, ii. pp. 401–403.

Baillon's Crake appears to be less partial to meres and open water than the Little Crake; on the contrary, it frequents the smaller marshes and swamps, especially where there is a surrounding of tamarisk and other bushes. Evening and daybreak are almost the only times when it is to be seen, unless very much pressed by a dog, and even then it is loth to take wing. Its call-note is said to be similar to that of the Little Crake. The nest, concealed amongst the aquatic vegetation, is composed of dry flags and sedge; the eggs, numbering from six to eight, are of an olive-brown, marked with darker blotches and streaks, occasionally almost umber-brown in colour, and measure about 1 by ·8 in. The food of this species appears to consist of insects and their larvæ, especially gnats, and small mollusks, with a little vegetable matter.

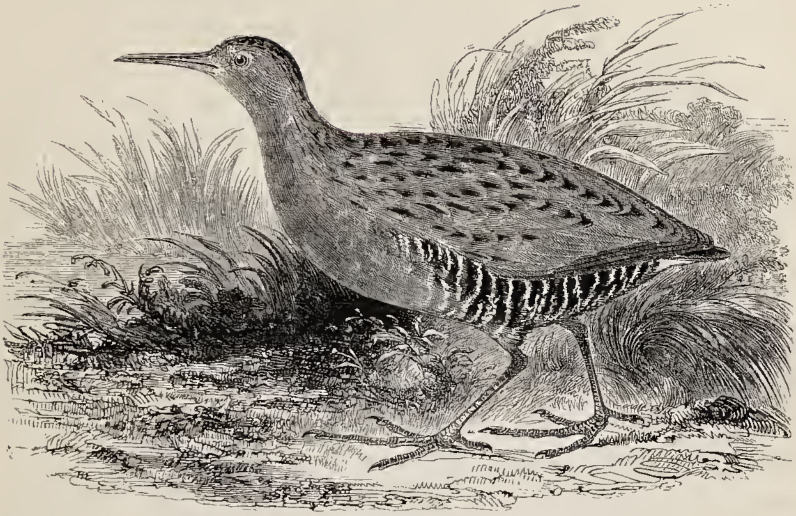
In the adult male the beak is green, the base red; irides red; top of the head and back of the neck clove-brown; centre of the back and the scapulars brown, thickly streaked with black, and thinly with white; wing-coverts and tertials clove-brown, spotted with white; primaries dark brown, the outer web of the first quill-feather edged with white; upper tail-coverts and tail-feathers clove-brown; throat, cheeks, sides, and front of the neck, breast, and belly, uniform lead-grey; flanks, vent, and under tail-coverts boldly banded and spotted with black and white; legs and toes dull olive.

The female has the chin nearly white, and the under parts generally paler; the tertials more streaked and barred with white, and even the tips of the primaries are faintly spotted.

The whole length is six inches and a half. From the carpal joint to the end of the wing four inches; the second and third feathers equal in length, and the longest in the wing; the length of the tarsus one inch and one-eighth; the length of the middle toe and claw one inch and five-eighths.

The young male which belonged to Dr. Thackeray was killed in the month of January, and was to all appearance a bird of the previous season, not having quite attained the mature plumage, the chin being still greyish-white, and the lead-grey colour of the front of the neck, breast, and belly being varied with patches of pale buffy brown and bars of greyish-white. In still younger birds, before their first autumn moult, the neck, breast, and under parts are pale buffy white mixed with light brown.

As particular marks of distinction between the two small species, it may be mentioned, that the Little Crake exhibits but a few white marks on the centre of the back, and sometimes on the scapulars, but never on the wing-coverts; in Baillon's Crake, on the contrary, these white marks are very numerous, occupying several distinct situations, namely, the central space on the back, the scapulars, wing-coverts, and tertial feathers on both sides: in Baillon's Crake, also, the outer web of the first primary is white, or mottled white; in the Little Crake it is unvaried brown, except when the feather itself is impoverished by age and atmospheric influences.



RALLUS AQUATICUS, Linnæus.*

THE WATER RAIL.

Rallus aquaticus.

RALLUS, *Brisson* †.—Beak longer than the head, slender, slightly decurved, compressed at the base, cylindrical at the point; upper mandible grooved at the sides. Nostrils lateral, pierced longitudinally in the lateral groove, partly covered by a membrane. Legs long and strong, with a small naked space above the joint; three toes before, and one behind; the anterior toes divided to their origin, the hind toe articulated upon the tarsus. Wings moderate, rounded; the first quill-feather much shorter than the second, the third and fourth quill-feathers the longest in the wing.

THE WATER RAIL, though well known as a species, appears to be less abundant than it really is: the habits of the bird, and the nature of the localities it frequents, increasing the difficulty of observation. It is found in the marshy districts of this country, and delights to dwell among the rank vegetation of fens, shallow pools, and watercourses, from which it can scarcely be driven to take wing. If obliged to fly, to save itself from being caught by an eager dog in close pursuit, its progress through the air is slow, with the legs hanging down; and it drops again in the nearest bed of reeds, flags, or rushes, that is likely, from its size or density, to afford sufficient security. The compressed form of its body enables it to pass easily through the thickest herbage; while its lengthened toes assist it to swim, and even to dive when necessary for its safety.

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* Syst. Nat. i. p. 262 (1766).

† Ornithologie, v. p. 151 (1760).

Generally distributed throughout England, Water Rails are naturally more abundant in such localities as those afforded by the Norfolk broads and their vicinity. Although many are resident throughout the year, yet a considerable portion of those bred in this country are stated by Mr. Stevenson to move southward in autumn, their places being taken by migratory flights from the north; and Mr. Hancock's experiences in Northumberland and Durham are of a similar nature. In Scotland Water Rails are said by Mr. R. Gray to be found in suitable localities both on the mainland and in the remotest islands; and in Shetland, where they are rather scarce, Dr. Saxby found that when the frost set in they would visit enclosed places, even venturing into corn-yards, although he never discovered corn in their stomachs even in the most severe winter. In Ireland this species is also resident, although both there and elsewhere it is more frequently remarked in winter, when the herbage, which at other times conceals it, is scanty, and when it is frozen out of the wet marshes.

A regular visitant to the Færoes, it is, according to Professor Newton, apparently a resident in Iceland, although a rare species there; but it is not as yet recorded from Greenland. In Norway it is only partially resident, breeding as far north as Trondhjemsfiord; and in Sweden, where the winters are colder, it is only a summer visitor, except in the south-western districts. Hardly known in Finland, where the nature of the country is unsuitable, it is found locally, and principally as a migrant, in Baltic Russia; but in Central Russia and Poland it passes the summer. In Northern Germany, Denmark, and even in Holland, it appears to be either comparatively rare or else is overlooked as a breeding species; but in Belgium, France, and Southern Germany it is a well-known resident, as well as a partial migrant. It breeds in considerable numbers in the Spanish Peninsula, and stretches eastward through Italy and the islands of the Mediterranean to Greece, Turkey, and Southern Russia, being found in the Caucasus up to a considerable elevation. In Morocco, where it occurs on migration, it probably breeds, as it certainly does in the marshes of Algeria, where Canon Tristram found it as far as Laghouat; but in Egypt it is principally a winter visitant, seldom passing south of the delta of the Nile, although it has been recorded from Abyssinia. In South Africa it is replaced by *R. cærulescens.*

The Water Rail occurs, and probably breeds, in the marshes of the Persian shores of the Caspian, in Western Turkestan, Afghanistan, Kashgar, Yarkand, Gilgit, where Dr. Scully found it on the spring migration, down to what Mr. Hume calls the Sub-Himalayan district.* South of this limit, down to Ceylon, it is replaced by a very closely allied form, also a migrant—*Rallus indicus*—which is slightly larger, has a dusky streak reaching not only through the lores, but also extending to the ear-coverts, and is also paler and more buff-tinted on the under parts than the European bird. These differences are not always strongly defined in a large series of skins; but if the specific validity of these and some minor points be admitted, it would then appear that *Rallus indicus* is the representative form from India to China and Southern Siberia, and also in Japan; some ornithologists, however, maintain the specific distinctness of *R. japonicus*, Schlegel.

Like other members of the family, the Water Rail is capable of long flights. The Rev. Robert Holdsworth wrote me word that a bird of this species alighted on the yard of a man-of-war, about five hundred miles to the westward of Cape Clear, and at the same distance from any known land. An officer of the ship caught it, and took care of it, and carried it with him to Lisbon, feeding it with bits of raw meat. In a day or two it became perfectly tame, and would eat out of his hand. More recently Mr. F. D. Godman obtained a specimen, taken in October, 1867, in 46° 48′ N. lat., and 11° 30′ W. long., or well outside the line of the Bay of Biscay.

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* Game Birds of India, ii. p. 261.

The food of this species is worms, snails, slugs, with some vegetables. Dr. Fleming mentions having seen the stomach of one that was filled exclusively with the young snails of *Helix lucida*. One of these birds, which Mr. Selby kept for some time, was fed entirely with earth-worms, upon which it continued to thrive, till an accident put an end to its life. It refused bread and the larger kinds of grain. In confinement this bird is observed to jerk its tail up while walking, like the Common Moor-hen; and I have heard of one that had so far conquered its timidity as to have become pugnacious.

During the nesting-season the birds are very noisy, uttering a loud and somewhat explosive cry. The nest, which is well concealed, is made of sedge and coarse grass, amongst the thickest aquatic plants; sometimes in willow beds. The eggs are of a cream-coloured white, with small specks of ash-grey and reddish-brown, measuring about 1·4 by 1 in. The usual complement appears to be about seven; but clutches of ten and even eleven eggs have been found. Mr. A. H. Evans obtained eggs, which were slightly incubated, from East Norfolk so early as April 8th (Zool. 1879, p. 268); and on the 1st May, 1863, Mr. H. Stevenson was shown three young Water Rails in black down; nests with eggs are also frequently found in June and July, so that it appears probable that two broods are produced in the season.

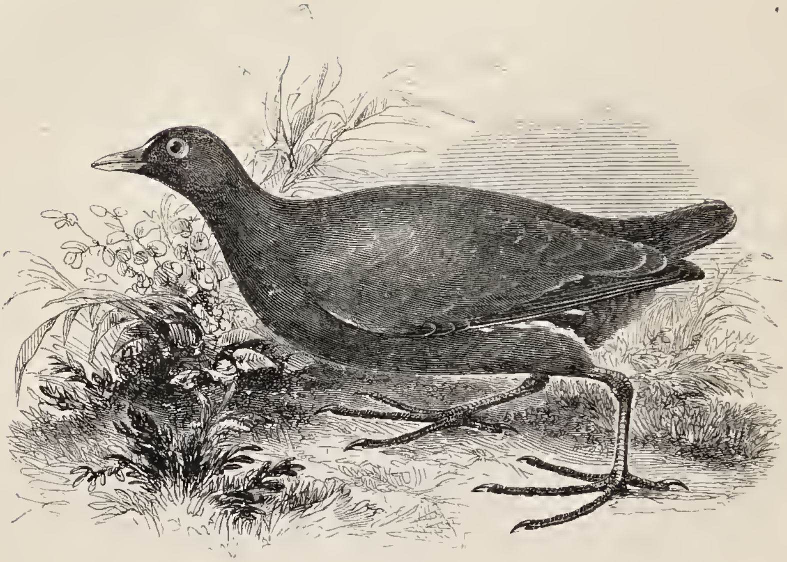
The beak of the adult male is red, one inch and three-quarters in length; the irides hazel; top of the head, neck, back, wing-coverts, and upper surface of the body generally olive-brown: each feather nearly black in the centre, with broad brown margins; primaries dusky; tail-feathers also dusky, with olive-brown margins; cheeks, chin, sides and front of the neck, and the breast, lead-grey; the sides and flanks very dark slate, barred with white; vent buff colour; under tail-coverts dull white; legs and toes brownish flesh colour. The whole length is eleven inches and a half. From the carpal joint to the end of the wing four inches and three-quarters.

The sexes do not differ much in plumage, but the female generally exhibits some white bars on the wing-coverts, the tail-feathers are somewhat browner, the bill is often a trifle shorter, and the colour less bright.

Young birds have the under parts of a dull buff-white, with brownish-grey bars, narrow above, and broader on the flanks, forming transverse bars; the flanks and thighs not so dark in colour, and without the white bands. The nestlings are covered with black down.

Isabelline varieties of the Water Rail are occasionally taken, and pure white examples are not unknown.

FULICARIÆ. *RALLIDÆ.*



Gallinula chloropus (Linnæus [*]).

THE MOOR-HEN,

OR WATER-HEN.

Gallinula chloropus.

Gallinula, *Brisson* [†].—Bill thick at the base, compressed, slightly swollen towards the tip, subconic, as short as the head. Upper mandible convex, with the culmen extended and dilated, forming a naked, oblong frontal plate or shield; lateral furrow wide; mandibles of nearly equal length; angle of the lower one ascending. Nostrils lateral, pervious, pierced in the membrane of the furrow in the middle of the bill; longitudinal and linear. Wings short, concave, rounded, armed with a small, sharp, recumbent spine. Legs strong, naked for a short space above the tarsal joint; scutellated in front; reticulated behind; feet four-toed, three before and one behind; toes long, divided and bordered through their whole length by a narrow entire membrane.

The Moor-hen is one of those well-known, half-domesticated species which afford interesting opportunities for observations on habits. Dr. William Turner, writing in 1544, calls this bird a Water-hen, or a Mot-hen; and Pennant says, that in the days of moated houses they were very frequent about the moats.* They are found also on ponds which are covered with aquatic herbage, old watercourses grown up with vegetation, and among the rushes, reeds, and willows of slow rivers. They can swim and dive with great facility, assisted by an expansion of the membrane along the sides of their toes. Moor-hens are commonly to be seen on the surface of the water, swimming along with a nodding motion of the head, picking up vegetable substances, first on one side, then on the other, and feeding generally on aquatic plants, small fishes, insects, worms, and slugs, for some of which they may be seen early in the morning, and again in the evening, walking over meadows near their haunts, diligently searching among the grass, particularly after a shower of rain in summer; jerking up their tails as they walk along, and showing the white under tail-coverts. Selby mentions that he has several times known this bird to have been taken on a line baited with an earthworm, intended for catching eels and trout; and infers, therefore, that it was by diving they obtain the larger coleopterous water insects, aquatic worms, and the larvæ of dragon-flies, upon which they are known to feed.

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[*] *Fulica chloropus*, Linnæus, Syst. Nat. Ed. 12, i. p. 258 (1766).

[†] Ornithologie, vi. p. 3 (1760).

When suddenly disturbed, they will sometimes take a short flight, with their legs hanging down, and will occasionally perch in a tree; they are, however, capable of more extended exertion on the wing, but appear to prefer the security afforded by thick rushes.

Shenstone refers to the hiding habits of the Coot and Moor-hen in the following lines:—

———— "to lurk the lake beside
Where Coots in rushy dingles hide,
And Moorcocks shun the day."

The nest is generally placed among reeds on the ground; sometimes among stumps, roots, or long grass, on a bank at the edge of the water; and the bird has been known to fix its nest on the branch of a tree which rested upon the surface of a deep still water. Another built her nest in the branch of a fir-tree which overhung a river, a few feet above the water, and was seen to fly down with two of her young brood, one in each foot, from the nest. The editor of the 'Naturalist' mentions an instance where "the nest of a Moor-hen floated on the water without having any attachment whatever with the islet which it adjoined; but was enclosed on all sides by sticks, &c. Thus situated, the careful parents hatched their eggs in perfect safety; though, had the water risen to an unusual height, the case might have been otherwise." The nest has also been found in trees at an elevation of twenty feet or more from the ground.

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* *Morish* or *moorish* was formerly used for marshy, thus Spenser:—

"The morish Cole and the soft-sliding Breane."—
Faerie Queene, Bk. iv. c. xi. st. xxix.

And again—"A huge great serpent all with speckles pide,
To drench himself in moorish slime did trace."—*Virgil's Gnat.*

An interesting account of Moor-hens moving their eggs to make an addition to their nest, is thus related by Selby in the printed 'Proceedings of the Berwickshire Naturalists' Club':—"During the early part of the summer of 1835, a pair of Water-hens built their nest by the margin of the ornamental pond at Bell's Hill, a piece of water of considerable extent, and ordinarily fed by a spring from the height above, but into which the contents of another large pond can occasionally be admitted. This was done while the female was sitting; and as the nest has been built when the water level stood low, the sudden influx of this large body of water from the second pond caused a rise of several inches, so as to threaten the speedy immersion and consequent destruction of the eggs. This the birds seem to have been aware of, and immediately took precautions against so imminent a danger; for when the gardener, upon whose veracity I can safely rely, seeing the sudden rise of the water, went to look after the nest, expecting to find it covered and the eggs destroyed, or at least forsaken by the hen, he observed, while at a distance, both birds busily engaged about the brink where the nest was placed; and, when near enough, he clearly perceived that they were adding, with all possible dispatch, fresh materials to raise the fabric beyond the level of the increased contents of the pond, and that the eggs had, by some means, been removed from the nest by the birds, and were then deposited upon the grass, about a foot or more from the margin of the water. He watched them for some time, and saw the nest rapidly increase in height; but I regret to add, that he did not remain long enough, fearing he might create alarm, to witness the interesting act of the replacing of the eggs, which must have been effected shortly afterwards; for upon his return, in less than an hour, he found the hen quietly sitting upon them in the newly-raised nest. In a few days afterwards the young were hatched, and, as usual, soon quitted the nest and took to the water with their parents. The nest was shown to me *in situ* very soon afterwards, and I could then plainly discern the formation of the new with the older part of the fabric."

The eggs are usually seven or eight in number, of a reddish-white colour, thinly spotted and speckled with orange-brown, measuring 1·65 by 1·2 in. Incubation lasts three weeks, and two, if not three broods are produced in a season, the first of which is generally hatched by the end of May. Lord Lilford says that he has several times observed young birds of the first brood assisting their parents in building a second nest; and Mr. J. M. Boultbee mentions an instance in which the chicks of the second hatch left the old birds, and were adopted by the young ones of the first hatch, who each took care of, and fed one of the chicks, leaving only one young one with the old hen.

In winter, during hard frost, when ponds are frozen over, Moor-hens resort to running streams, and harbour in plantations, hedgerows, and thick bushes; roosting in firs, thorn-trees, and others that are covered with ivy, feeding probably on the berries. On the disappearance of the ice, they return to the ponds. When the bird is in good condition, the flesh is considered by some people to be well-flavoured, but to the majority it is distasteful. The Moor-hen is very pugnacious, both as regards its own species, and also with respect to other water-fowl, which it will attack and drive from their food; it will also kill and devour their young, and is on that account a dangerous neighbour. Its usual food is aquatic insects and their larvæ, slugs, beetles, worms, grass-shoots, and grain, when procurable. The call-note is a loud *crek-rek-rek* several times repeated, and especially towards evening.

The Moor-hen is generally distributed throughout the British Islands, and as a rule is resident, but in the colder districts of the north it migrates southward in winter. An irregular visitant to the Færoes, it breeds sparingly in Norway and Sweden; nor does it range far north in Russia; but south of the Baltic it appears to be generally distributed where localities are suitable, breeding throughout Northern and Central and Southern Europe down to the Mediterranean, and also on the African side, where, however, the migrants are in the majority. In the Canaries, Madeira, and the Azores it is resident, and its course can be traced down the West Coast of Africa to Cape Colony, and round that continent by Mozambique and the islands of Réunion and the Seychelles, up to Abyssinia, and so back to Egypt. Eastward it is generally diffused throughout Asia as far north as Darasun and Kultuk, where Dybowski obtained both eggs and birds; and southwards throughout India, Ceylon, the Philippines, China, and Japan up to the North Island, being generally resident and partially migratory, according to the influences of cold at the loftier elevations, or the want of suitable moist localities in the hot low countries. Upon this subject Mr. H. Parker (Ibis, 1883, p. 195) has contributed the results of some interesting observations made in the Mannâr district in North-western Ceylon, tending to show that the migration thither for breeding purposes is the result of the food-supply produced by the establishment of tanks about 2,000 years ago. In considering the birds resident over this wide area as belonging to the same species, it must be mentioned that there are certain local races of the Moor-hen, and that both the Indian and the African forms are slightly shorter in the wing than examples from Western Europe: the frontal plate is also larger in

Eastern birds. In Madagascar is found a representative form, which has been distinguished by Professor Newton under the name of *G. pyrrhorrhoa,* and which has a larger frontal plate, yellow legs, buff under tail-coverts, and a different note; and in America a closely-allied species, *G. galeata,* occurs throughout the temperate and tropical portions of that continent. In the Hawaiian Islands a well-defined species, *G. sandvicensis,* is found; and a remarkable island form, *G. nesiotis,* occurs in the Tristan d'Acunha group.

The male has the beak yellowish; the base of it, and the naked patch on the forehead, red; irides reddish-hazel; the back, wings, rump, and tail, rich dark olive-brown; head, neck, breast, and sides, uniform dark slate-grey; outside of the thighs and the flanks streaked with white; belly and vent greyish-white; under tail-coverts white; above the tarsal joint a garter of red; legs and toes greenish-yellow; the claws dark brown.

Length about thirteen inches. From the carpal joint to the end of the wing six inches and three-quarters.

The female is, as a rule, rather larger, and more vividly coloured than the male.

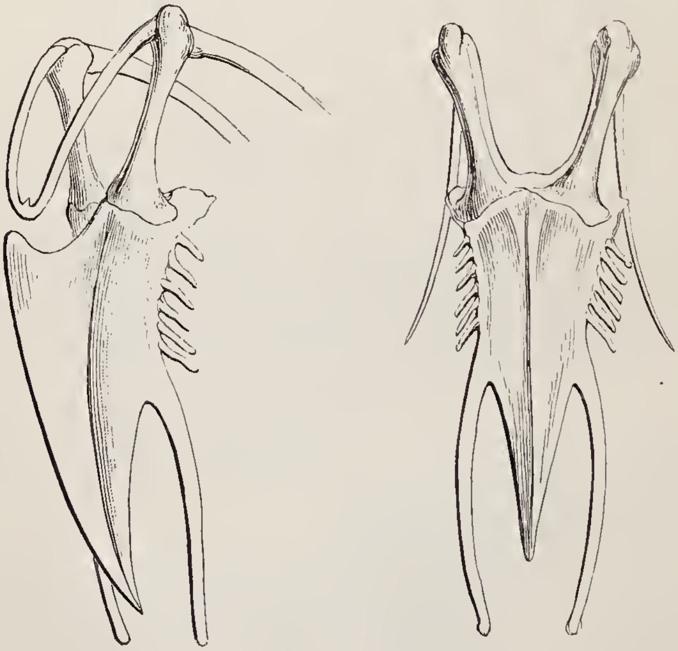
The young are at first covered with black hairy down. Their after-plumage is white on the throat; front and cheeks a mixture of brown and white; breast and sides ash-grey, tinged with brown; the belly paler; the flanks streaked with yellowish-brown; under tail-coverts cream-yellow; upper parts dark grey, tinged with oil-green; beak and legs dull green; the frontal patch small, and partly concealed by feathers.

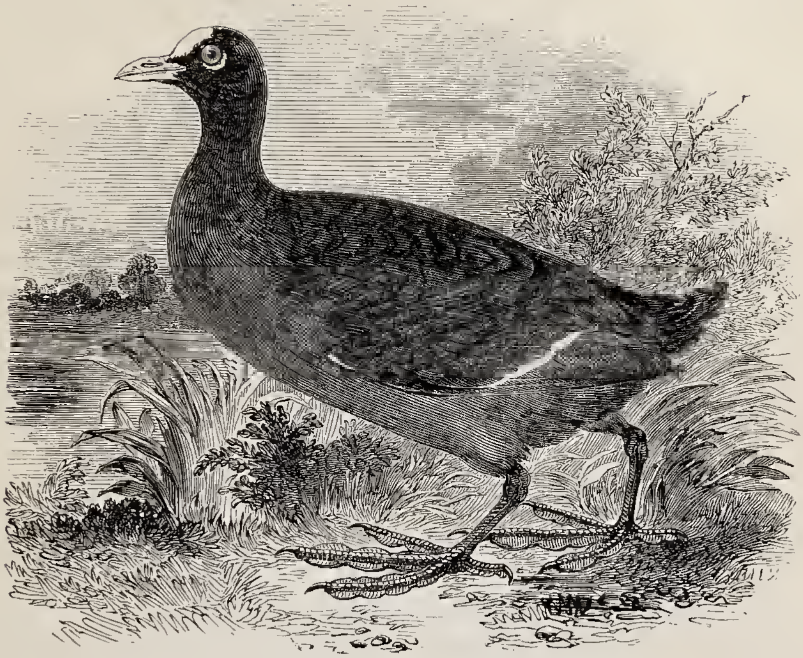
The Rev. Mr. Lubbock mentions a curious variety of the Moor-hen, in which the back and wings were mottled with white, and sandy-coloured specimens have been obtained in Norfolk and near Nottingham.

The vignette represents the breast-bone of the Moor-hen of the natural size, in two points of view, one from the side, the other as seen from below; the latter serves to illustrate the flattened form of the body which belongs to the Crakes, Gallinules, and Rails.

The Purple Gallinule (*Porphyrio cæruleus*), and the Green-backed Gallinule (*P. smaragdonotus*), have both been captured several times in the British Islands. The former inhabits the swamps of North Africa, the Caspian, and the marshes of the islands and the northern shores of the Mediterranean, and has once occurred in Germany; the latter is essentially an African species, and a doubtful straggler even to Sardinia and Sicily. Both species are frequently kept in confinement in this country, and as many of the individuals captured can be clearly proved to have escaped, it seems reasonable to assume that the others were not genuine migrants.

The Martinique Gallinule (*Porphyrio martinicus*), a common species in Tropical America, is stated by Thompson (Ann. and Mag. Nat. Hist. xviii. p. 311), to have once occurred on the south-west coast of Ireland.





Fulica atra, Linnæus.*

THE COMMON COOT.

Fulica atra.

Fulica, *Brisson* †.—Beak of medium size, shorter than the head, strong, conical, straight, compressed at the base, higher than broad, superior basal portion extending up the forehead, and dilated, forming a naked patch; points of both mandibles compressed, of equal length; the upper one slightly curved, the inferior mandible with an angle underneath at the symphysis. Nostrils lateral, pierced longitudinally about the middle of the beak, partly closed by a membrane. Legs long, slender, naked above the tarsal joint; three toes in front, one behind; all the toes long, united at the base, furnished laterally with an extension of the membrane, forming round lobes. Wings of moderate size; the first feather shorter than the second or third, which are the longest in the wing. Tail short.

The Coot is a generally distributed species throughout the British Islands, upon large ponds, lakes, and slow rivers; it also frequents the level shores of some parts of the coast, where extensive mud-flats are laid bare at each retiring tide, preferring, however open waters, and does not, except in the breeding-season, so much seek the sheltered reed-grown situations frequented by the Moor-hen; the extreme watchfulness of the Coot enabling it to avoid danger.

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* Syst. Nat. Ed. 12, i. p. 257 (1766).

† Ornithologie, vi. p. 23 (1760).

Owing to successive drainage of its breeding haunts in this country, Coots are gradually diminishing in number, and of late years the species has become scarcer and more localized in many of our English counties. On the other hand, upon the Nene, in Northamptonshire, Lord Lilford says that it has become much more abundant. The Norfolk broads, Southampton Water, Poole, and other parts of Dorsetshire, and Slapton Ley, in Devonshire, are places where this species is still plentiful; although the days have passed when a fen-man, in answer to Mr. Lubbock's question as to the number of Coots visible on Hickling Broad, could estimate them at "about an acre and a half"; or a shoal reaching two miles in length by half a mile across, be seen upon the Manningtree river in Essex.* Large numbers are still, however, killed annually at the battues, especially on some of the "broads," and at Slapton Ley. As a rule the Coot is resident, but in the colder districts, when the inland lakes and streams are closed by the frost, it migrates partially, and with reluctance (generally in the evening), to the salt water. This takes place more particularly in the northern and north-eastern districts, but in the milder west it remains throughout the winter, even in the Hebrides and the Orkneys; occasionally visiting Shetland at that season. In Ireland it is permanently resident, and generally distributed where the localities are suitable.

A very rare straggler as far as the south-west of Iceland, the Coot is a tolerably regular visitor to the Færoes. On the coast of Norway, which is warmed by the Gulf Stream, it has been known to occur as far as 70° N. lat., and it breeds in the southern districts of that country, and of Sweden. South and east of the Baltic it is generally distributed throughout the Continent down to the shores of the Mediterranean, where, owing to the arrival of migrants from the north, it occurs in vast numbers in winter. In the south of France, especially in Provence, it is known by the name of *Macreuse,* elsewhere applied to the Scoter Duck, and its flesh being allowed to be eaten in convents on *jours maigres,* large *battues* were formerly organized in order to obtain supplies. Parties for the purpose of sport still take place annually; and more than a thousand Coots sometimes fall in a single day. Similar bags have been made at the great lake of Albufera near Valencia, in Spain, in which country the Coot also breeds in some numbers in suitable localities, especially in Andalucia; but in Italy, the islands of the Mediterranean and Greece, comparatively few remain to nest. It occurs in Turkey, and along the Black Sea as far as the foot of the Caucasus, and it appears to be resident in Asia Minor and Palestine. Eastward it ranges across Persia and Turkestan to Kashmir, where it breeds in small numbers, and it visits Northern India, especially the lakes of Sind, where it is found, according to Mr. Hume, in hundreds of thousands during the cold season. In other parts of India its distribution is somewhat irregular, but it was obtained by Capt. R. Wardlaw-Ramsay in Burmah, and a form of doubtful specific value occurs in Java. To the north of the great Central Asian range it appears to be principally a spring and summer visitant: it breeds in Manchuria, and many parts of China, and a slightly larger race is a resident in Japan. In Australia, a form with a somewhat slenderer bill is met with.

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* Stevenson's B. of Norfolk, ii. p. 429.

Returning to the west, our Coot is found in the Azores, Madeira, and the Canaries; it occurs upon the lakes and rivers of North Africa, swarming in Lower Egypt in winter, and ranges as far south as the Blue Nile. In Southern Spain, however, and in Morocco, it meets with its near congener, the Crested Coot (*Fulica cristata*), which has two bright red caruncles on the frontal plate, and this species replaces it throughout the greater part of Central and Southern Africa.

A solitary example is recorded by Reinhardt as having straggled to Greenland in 1876, and that Peninsula has also been visited by the North American representative, *Fulica americana*, which may be distinguished from the European bird by its white lateral under tail-coverts.

Colonel Hawker, in his Instructions to Young Sportsmen, says, "If a gentleman wishes to have plenty of wild-fowl on his pond, let him preserve the Coots, and keep no tame Swans. The reason that all wild-fowl seek the company of the Coots is because these birds are such good sentries, to give the alarm by day, when the fowl generally sleep."

The Coot is seldom seen on dry land, and its power of active progression on shore has been doubted; but instead of being awkward on land, it is fully as lively as in the water, standing firmly and steadily, and without any tottering or waddling in its gait, and running with amazing rapidity on the ooze. It picks up grain with surprising alacrity, even much quicker than any of our domestic poultry. If deprived of water on which to pass the night, it will roost, as other land birds, upon any elevated situation, and it will ascend a tree with the activity of a Wren. In reference to the power of its claws, the sportsman's book already referred to contains the following caution:—"Beware of a winged Coot, or he will scratch you like a cat."

Coots feed on aquatic insects, worms, slugs, and various portions of vegetable matter. They breed in many parts of England, forming a nest of flags, among reeds, upon the margins of lakes, ponds, and rivers. Hewitson says that "he has had opportunities of examining many of their nests. They are large, and apparently clumsy at first sight, but are amazingly strong and compact; they are sometimes built on a tuft of rushes, but more commonly amongst reeds; some are supported by those that lie prostrate on the water, whilst others have their foundations at its bottom, and are raised till they become from six to twelve inches above its surface, sometimes in a depth of one and a half or two feet. So firm are some of them, that, whilst up to the knees in water, they afforded me a seat sufficiently strong to support my weight. They are composed of flags and broken reeds, finer towards the inside, and contain from seven to ten eggs." These are stone colour, speckled over with nutmeg-brown, and measure about 2·08 by 1·5 in. Bewick mentions that a Bald Coot built her nest in Sir W. Middleton's lake, at Belsay, Northumberland, among the rushes, which were afterwards loosened by the wind, and, of course, the nest was driven about, and floated upon the surface of the water, in every direction; notwithstanding which, the female continued to sit as usual, and brought out her young upon her movable habitation. Some broods appear towards the end of May, others in June. The young quit the nest soon after they are hatched, and leave it entirely after three or four days, to follow their parents, who are very careful of them.

Sir Thomas Browne, of Norwich, when writing of British Birds, about 1635, says, "Coots are in very great flocks on the broad waters. Upon the appearance of a Kite or Buzzard, I have seen them unite from all parts of the shore in strange numbers; when, if the Kite stoop near them, they will fling up, and spread such a flash of water with their wings, that they will endanger the Kite, and so keep him off again and again in open opposition." In confirmation of this Lord Lilford writes: "It is very common in winter on the lakes of Epirus, in which country I have several times observed the singular manner in which a flock of these birds defend themselves against the White-tailed Eagle. On the appearance over them of one of these birds, they collect in a dense body, and when the Eagle stoops at them they throw up a sheet of water with their feet and completely baffle their enemy; in one instance, on a small lake near Butrinto, they so drenched the Eagle that it was with difficulty that he reached a tree on the shore, not more than a hundred yards from the spot where he attacked them. They seemed to take very little notice of the Spotted Eagles, Harriers, Buzzards, &c., but on the appearance of Bonelli's Eagle would scatter off to the covert of the reeds with which most of the lakes are thickly fringed. I never, however, observed any bird of prey attack them except the White-tailed Eagle and Peregrine Falcon, which latter would occasionally cut one down as they flew over the land."

Of their habits in autumn and winter, when pursued by the sportsman or the fowler, Colonel Hawker says: "Coots found in rivers are scarcely thought worth firing at; yet they are in great requisition when they arrive for the winter on the coast, from the immense number that may be killed at a shot, as they roost on the mud-banks. Coots, when on the coast, usually travel to windward, so that a west wind brings them to the west, and an easterly wind to the east, instead of the contrary, as with other fowl. The plan that I have found best for slaughtering the Coots by wholesale is, either to listen for them before daylight, and rake them down at the grey of a white frosty morning, or watch them at some distance in the afternoon, and set into them as late in the evening as you can see to level your gun, taking care, if possible, to keep them under the western light. Coots, instead of drawing together before they fly, like geese and many other fowl, always disperse on being alarmed; and, as they generally fly to windward, the gentleman's system of wild-fowl shooting answers well, which is, to embark with a party, sail down on them, and, as they cross, luff up, and fire all your barrels. When a beginner at wild sport, I used to be mightily pleased with this diversion. When on the coast, you may easily distinguish Coots from wild-fowl by the scattered extent of their line, their high rumps, their rapid swimming, and their heads being poked more forward.

"They are generally sold for eighteen-pence a couple, previously to which they are what is called *cleaned.* The recipe for this is, after picking them, to take off all the black down, by means of powdered resin and boiling water, and then to let them soak all night in cold spring water; by which they are made to look as white and as delicate as a chicken, and to eat tolerably well; but, without this process, the skin in roasting produces a sort of oil, with a fishy taste and smell; and if the skin be taken off, the bird becomes dry, and good for nothing. A Coot shot in the morning, just after roosting, is worth three killed in the day when full of grass, because he will then be whiter, and milder in flavour. A Poole man is very particular about this, as the sale of his Coots much depends on it."

Coots have a very powerful flight when once on the wing, and fly with their legs stretched out behind, acting the part of a tail, in the manner of a Heron.

The beak is of a pale rose-red, or flesh colour; the patch on the forehead naked, and pure white; hence the name of Bald Coot*; the irides crimson; below the eye a small half-circular streak of white; the whole of the plumage above and below sooty black, tinged with dark slate-grey; the head rather darker than the body; primaries nearly pure black; secondaries tipped with white, forming a line or narrow bar across the wing; legs, toes, and membranes, dark green, the garter above the tarsal joint orange.

The whole length is eighteen inches. From the carpal joint to the end of the wing, about eight inches.

The adult bird, from its more decided dark colour, was formerly considered distinct, and called *F. aterrima* by Linnæus; but we have only one species. The young birds of the year are smaller than the parent, the naked frontal patch is also smaller, the throat is nearly white, and the under parts of the plumage are of a lighter grey. Young chicks on emerging from the egg-shell are covered with black down, with some lighter-coloured filaments about the upper parts.

Varieties entirely white, and others only partially white, have occurred in Norfolk and Lincolnshire, and on the Continent.

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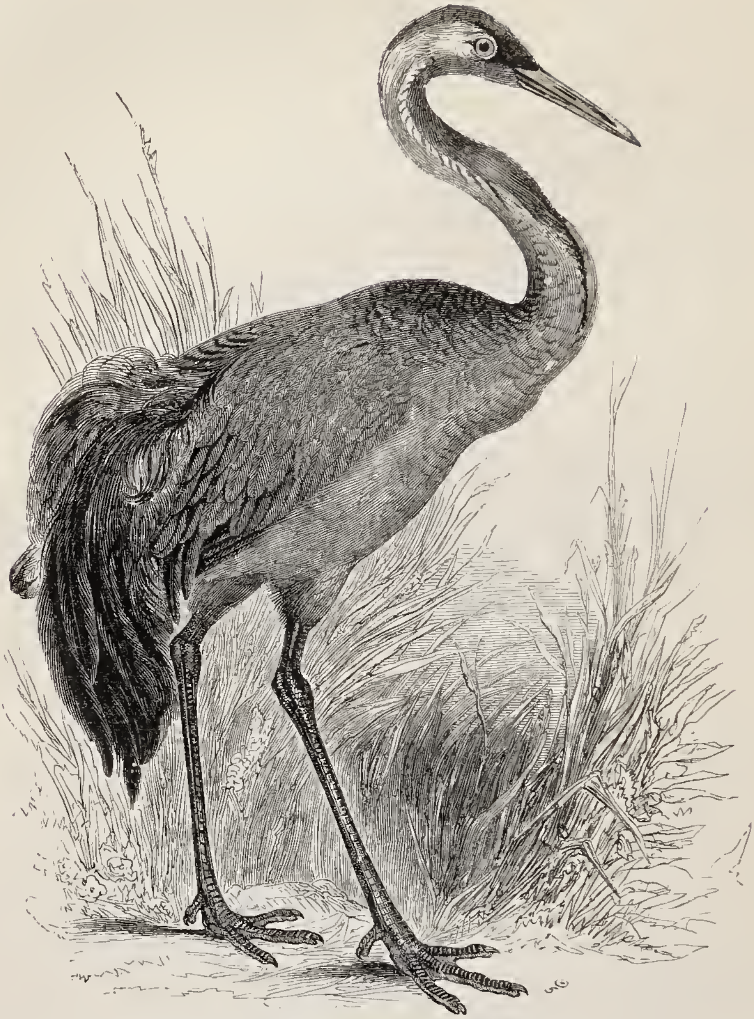
* Thus Drayton in his 'Poly-olbion,' 25th Song:—

> "The *Coot*, bald, else clean black, that whitenesse it doth beare
> Upon the forehead starr'd, the Water-hen doth wear
> Upon her little tayle, in one small feather set."



GRUS COMMUNIS, Bechstein.*

THE COMMON CRANE.

Grus cinerea.

GRUS, *Bechstein* †.—Beak longer than the head, straight, strong, compressed, and pointed. Nostrils placed longitudinally in a furrow, large, pervious, closed posteriorly by a membrane. Legs long, strong, naked above the joint; three toes in front; middle toe united to the outer toe by a membrane; hind toe articulated high up on the tarsus. Wings moderate, rounded in form; the first quill-feather shorter than the second; the third the longest in the wing.

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* Vög. Deutschl. iii. p. 60 (1793). † *loc cit.*

In former Editions of this work the Crane was classed in the same order with the Herons; but it is now generally admitted by modern systematists that the *Gruidæ* have no real affinity to the *Ardeidæ.* The young of the Herons and Storks are nearly naked and helpless when hatched, whereas the young of the Cranes are covered with a close down, and they are able to run about soon after emerging from the shell, like those of the Rails, the Bustards, and the Plovers. In the structure, and also in the external coloration of the shell, the eggs of some of the Cranes have considerable resemblance to those of the Bustards; and the two families of the *Gruidæ* and the *Otididæ* are now generally placed in the Order *Alectorides.*

Though at the present time only an occasional and rare visitor to the British Islands, the Crane was formerly much more frequent. In a letter addressed to Boniface, Bishop of Mayence, who died in 755, the Saxon King Ethelbert requested him to send over two Falcons suitable for flying at the Crane in Kent: *i.e.* Gyrfalcons. Giraldus Cambrensis, who travelled in Ireland in 1183–86, in company with Prince John, states that Cranes were then so numerous that as many as a hundred or thereabouts might often be seen in one flock; and similar testimony is given by Ranulphus Higden (*circa* 1350). After the accession of John to the throne, the entries in the court-rolls of his expenses show that he was in the habit of flying Gyrfalcons at this bird on his various journeys: seven Cranes having been obtained in this manner at Ashwell in Cambridgeshire, in December 1212, and nine in Lincolnshire on another occasion.* Leland, in his *Collectanea,* includes in the bill of fare at the feast of Archbishop Neville (*temp.* Edward IV.), two hundred and four Cranes; and, according to Sir David Lindsay, Cranes were also served at a grand hunting entertainment given by the Earl of Athol to James V. of Scotland and the Queen Mother, in Glen Tilt. In the 'Household Book' of the fifth Earl of Northumberland (1512), occurs the entry: "It is thought that Cranys muste be hadde at Crystynmas and other principall feestes for my Lordes owne Mees, so they be boght at xvj*d.* a pece," equivalent to about eight shillings of our money. In the Norfolk 'Household Book' of the L'Estranges of Hunstanton, already quoted (p. 95), there are five references to Cranes, and by one of these, in 1533, "the xxvjth weeke [after the 29th March, *i.e.* about September 26th], the price paid appears to have been only vj*d.* Later, in the same year, occurs the ominous record: "The xxxviijth weke, Tewysdaye, Itm. a Cranne kylld wt. the gun." By Dugdale's *Origines Juridiciales*, we learn that by 1555 the price charged for a Crane at a banquet in the Inner Temple Hall in October, had already risen to x*s.*, the same as for a Swan or Bustard. Previous to this date, by an Act passed in 1534, the taking of eggs of the Crane and of the Bustard had been prohibited under the same maximum penalty of 20*d.* for every egg; showing that although becoming scarcer than in former times, Cranes were still numbered amongst birds which bred in this country; principally, no doubt, in the marshes of the Eastern counties. It was, probably, of that district that Dr. William Turner, who although a Northumbrian by birth, lived nearly fifteen years at Cambridge, wrote, "Apud Anglos etiam nidulantur grues in locis palustribus, et earum pipiones sæpissime vidi, quod quidam extra Angliam nati, falsum esse contendunt."* Half a century later, Dr. Thomas Muffet, of Bulbridge, near Wilton, Wiltshire, who died in 1590, confirms the statement that the Crane still bred in the fens.†

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* J. E. Harting, 'The Field,' December 23rd, 1882, in a very interesting article on the early records of this bird.

Drayton, describing Lincolnshire, says:

> "There stalks the stately *Crane*, as though he marched in warre."‡

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* Avium Historia, Coloniæ, 1544.

† "Health's Improvement: or, Rules comprising and discovering the Nature, Method and Manner of Preparing all Sorts of Food used in this Nation. Corrected and enlarged by Christopher Bennet, Ph.D., 1655." The learned Doctor considers "the flesh [of the Crane] distinctly unfit for sound men's tables, and much more unmeet for them that be sick; yet being young, killed with a Goshawk, and hanged two or three daies by the heels, eaten with hot galentine, and drowned in Sack, it is permitted unto indifferent stomachs."

‡ "Poly-olbion," 25th Song, line 93 (1622).

And about 1667 Sir Thomas Browne, of Norwich, is found writing: "Cranes are often seen here in hard winters, especially about the champian (*sic*) and fieldy part. It seems they have been more plentiful, for in a bill of fare, when the Mayor entertained the Duke of Norfolk, I met with Cranes in a dish."* In 1678 Willughby, in his *Ornithologia*, was still able to say, "They come to us often in England, and in the fen-countries in Lincolnshire and Cambridgeshire there are great flocks of them; but whether or no they breed in England, I cannot determine, either of my own knowledge, or from the relation of any credible person." Ray adds no original information respecting this bird. It may fairly be assumed that the Crane has ceased to breed in this country for nearly three centuries, and that with the dying out of the immediate descendants of those individuals which used to nest in our marshes, a gradual decrease took place even in the number of those annual visitants which were impelled by the cold of the Continent to seek their food in the milder and more open fens of these western islands. With the drainage of their former haunts, the increase of population, and the general use of fire-arms, even these periodical visits ceased; and, in the present century, the Crane can only be considered a rare and irregular straggler to our shores, generally in autumn and winter: although sometimes, on the spring migration. Cornwall, Devon, Somerset, Dorsetshire, Hampshire, Sussex, Kent, Oxfordshire, Suffolk, Norfolk, Lincolnshire—the latest near Spalding on the 25th October, 1882 (Zool. 1882, p. 463)—Gloucestershire, and Yorkshire, are amongst the counties visited; the years 1865 and 1869 having been unusually productive in arrivals.

In Scotland, two occurrences are cited by Mr. R. Gray in Ross-shire; one in Aberdeenshire; and one near Hawick, in Jedburghshire; whilst in the Orkneys a good many examples are on record, and even more in the Shetland Islands—one, evidently on migration, having been obtained in Unst so recently as the end of May, 1869. In Ireland, the occurrence of "some few Cranes" is recorded by Smith in his Histories of the Counties of Waterford and of Cork, during the great frost of 1739, "but not since or before in any person's memory"; Thompson only mentions one shot in the county of Galway, and another in Tralee Bay; and two have been obtained in Kerry.*

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* Wilkin's Edition, vol. iv. p. 314. Pickering, 1835.

The Crane is an occasional straggler on migration to the Færoes and to the northern districts of Norway, and breeds in the large morasses in the interior of the latter country and of Sweden: in Lapland, Finland, and in suitable localities throughout the greater part of Russia and Poland. Owing to the drainage of the marshes, it no longer nests regularly in Denmark, but it still does so in many districts of Northern Germany; and even in those parts of the Continent in which it does not take up its abode, the loud trumpet-like clanging note, often heard at night when the utterer is invisible, is a familiar announcement of the spring passage. In Northern Europe this is generally about the beginning of April, and the return takes place in September; but in France, where it is not known to breed, the spring migration in the south-western districts commences, according to the Editor's observations, early in March. In some portions of the Spanish Peninsula it is abundant in autumn and during the winter—a tolerable number remaining to breed in some of the marshes of Andalucia.† In the islands, and on both the northern and southern shores of the Mediterranean, it is principally a migrant or a winter resident; but although very abundant in North Africa, Palestine, and Persia during the latter season, it is not known to nest in those countries. Eastwards, the Crane ranges across Siberia to Kamschatka, the Amoor and Japan, breeding in the morasses to the north of the principal watersheds, and wintering in China and in India, where, especially in the Punjaub and North-West Provinces, immense flocks are sometimes to be seen in the grain fields.* On its migrations it has been observed crossing the lofty ranges of Central Asia, and Prjevalski, when at the height of 10,600 feet, observed flock following flock during the whole day at such an enormous altitude that they could hardly be seen.

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* The above remarks undoubtedly refer to the bird under consideration, but it should be remembered that at the present time, in Ireland, Wales, on the Scottish Border, and in many parts of England, the name of *Crane* is frequently applied to the *Heron,* and sometimes to the *Cormorant* and other long-necked birds.

† The Editor found it nesting there early in May, 1868, but owing to the prevalent belief at that time that its breeding places were confined to the North, his statements were received in some quarters with an incredulity which was only dissipated by the exhibition of its unmistakable eggs.

In mild climates, the Crane commences nidification about the end of April, but in the north eggs are hardly to be found before the middle of May. The nest is invariably placed on the ground, on the drier portions of marshes, and the eggs are as a rule two in number, although Meves has known as many as three: of a pale greenish-olive ground colour, blotched and spotted with reddish-brown surface-markings and pale brown underlying shell-spots; they measure about 3·8 by 2·6 in. The best and earliest circumstantial account of the nesting of the Crane is, undoubtedly, that given by the late Mr. John Wolley, in 'The Ibis,' 1859, pp. 191–198. Since that date several British ornithologists have made the acquaintance of the Crane in its breeding-haunts, and the charm of novelty has, perhaps, so far passed away that naturalists of the present and of succeeding generations may marvel at the thrill of enthusiasm communicated to Wolley's contemporaries by the narrative of his discovery; yet the fact remains that no one of his successors has ever rivalled his description, which, with a prosaic adherence to facts, is at the same time steeped in the poetic feeling of the true lover of nature. It is much to be regretted that only a portion can here be quoted:—

"It was on the 15th June, 1853, that I entered the marsh which the well-known Pastor Læstadius had told me was the most northern limit in Lapland of the breeding of the Crane. It is in Swedish territory, being on the west side of the frontier river, opposite the Finnish (Russian) village of Yli Muonioniska, in about lat. 68°, that is, some distance within the Arctic Circle. This great marsh, called '*Iso uoma*,' is mostly composed of soft bog, in which, unless where the Bog-bean grows, one generally sinks up to the knees, or even to the middle; but it is intersected by long strips of firmer bog-earth, slightly raised above the general level, and bearing creeping shrubs, principally of sallow and dwarf birch, mixed in places with *Ledum palustre*, *Vaccinium uliginosum*, *Andromeda polifolia*, *Rubus chamæmorus*, besides grasses, *carices*, mosses, and other plants. There were also a few bushes or treelets of the common birch, and these quite numerous in some parts of the marsh. Walking along one of these strips, in a direction where the pair of Cranes was said to be often heard, I came upon a nest which I was sure must be a Crane's. I saw one bit of down. The nest was made of very small twigs mixed with long sedgy grass; altogether several inches in depth, and perhaps two feet across. In it were two lining-membranes of eggs, and on searching amongst the materials of the nest I found fragments of the shells. We had not gone many yards beyond this place, when I saw a Crane stalking in a direction across us amongst some small birch-trees, now appearing to stoop a little, and now holding its head and neck boldly up as it steadily advanced. Presently the lads called out to me that they had found some young Cranes. As I ran towards them, a Crane, not the one I had previously seen, rose just before me from among some bushes which were only two or three feet high, and not twenty yards from the place where the lads had been shouting at least for a minute or two. It rose into the air in a hurried, frightened way. There was nothing just at the spot where it got up, neither eggs nor young. I then went up to where the two little Cranes were found. They were standing upright, and walking about with some facility, and making a rather loud 'cheeping' cry. They seemed as if they could have left such eggs as Cranes were supposed to lay only a very few days. I say *supposed*, for in England we know nothing of the eggs which are called Cranes', but which may have come from any part of the world. They were straightly made little things, short in the beak, livid in the eye, thick in the knees, covered with a moderately long chestnut or tawny-coloured down, darker on the upper parts, softening away into paler underneath. As I fondled one of them it began to peck playfully at my hands and legs, and when at length I rose to go away, it walked after me, taking me, as I supposed, for one of its long-legged parents. I had only just before been plucking from it some bits of down to keep; for, valuable as I knew it to be in a natural-history point of view, I could not make up my mind to take its life. As soon as I saw its inclination to follow, I took to double-quick time, and left it far behind. Its confidence was the more remarkable, as, all the time we were with it, the old Cranes were flying round near the ground at some distance from us, their necks and feet fully stretched out as usual, but with a remarkable sudden casting up of the wings in a direction over the back after each downward stroke, in place of the ordinary steady movement. At the same time they were making a peculiar kind of low clattering or somewhat gurgling noise, of which it is very difficult to give an intelligible description; and now and then they broke out into a loud trumpeting call not unlike their grand ordinary notes, which, audible at so great a distance, gladden the ears of the lover of nature. As we went away I saw one of the Cranes alight where we had left the young. . . . . .

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* The late Mr. E. Blyth (Monograph of the Cranes, pp. 59 and 61) considered that the oriental race which visited India during the cold season, and which is presumably identical with the Japanese bird, was distinguishable from the occidental race.

"The following year, 1854, on the 20th of May, I went with Ludwig, my servant lad, to look for the Crane's nest in '*Iso uoma.*' We saw no birds; and the spot where the nest had been the preceding year was not easy to find in so extensive a marsh. So we quartered our ground, working carefully up one strip of harder bog and down the next. After some hours of heavy walking I saw the eggs—joyful sight!—on an adjacent slip in a perfectly open place. The two eggs lay with their long diameters parallel to one another, and there was just room for a third egg to be placed between them. The nest, about two feet across, was nearly flat, made chiefly of light-coloured grass or hay loosely matted together, scarcely more than two inches in depth, and raised only two or three inches from the general level of the swamp. There were higher sites close by; and many of them would have seemed more eligible.

"It was just at the lowest edge of the strip, but so much exposed, that I thought I should be able to see even the eggs themselves from a spot at a considerable distance, to which I proposed to go. There was a common story amongst the people of the country, that a Crane, if its nest were disturbed, would carry off its eggs under its wing to another place; so I purposely handled one of the eggs, and hung up a bit of birch bark on a birch-tree beyond the nest, as a mark by which to direct my telescope. Then I went with Ludwig to a clump of spruce growing on some dry-sandy land which rose out of the midst of the marsh. Here I made a good ambuscade of spruce boughs, crept into it, got Ludwig to cover me so that even the Crane's eye could not distinguish me, and sent him to make a fire to sleep by on the far side of the wood, with strict orders on no account to come near my hiding-place. I kept my glass in the direction of the nest; but it was long before I saw anything stir. In the meantime the marsh was by no means quiet; Ruffs were holding something between a European ball and an East-Indian nautch. Several times 'keet-koot, keet-koot,' to use the words by which the Finns express the sound, told where the Snipes were. A cock Pintail dashed into a bit of water calling loudly for its mate. The full melancholy wailing of the Black-throated Diver came from the river; watch-dogs were barking in the distance; I heard the subdued hacking of wood and the crackling of Ludwig's fire. It was already about midnight; Fieldfares were chasing each other through the wood: one came pecking about my feet; and another, settling on the branches that covered my back, almost made my ears ache with the loudness of its cries. I often heard the waft of known wings; but three times there sounded overhead the sweeping wave of great wings to which my ears were unaccustomed. I could scarcely doubt it was the Cranes'; but I dare not turn up my eye: I even once or twice heard a slight chuckle that must have been from them. At length, as I had my glass in the direction of the nest, which was three or four hundred yards off, I saw a tall grey figure emerging from amongst the birch-trees, just beyond where I knew the nest must be; and there stood the Crane in all the beauty of nature, in the full side-light of an Arctic summer night. She came on with her graceful walk, her head up, and she raised it a little higher and turned her beak sideways and upwards as she passed round the tree on whose trunk I had hung the little roll of bark. I had not anticipated that she would observe so ordinary an object. She probably saw that her eggs were safe, and then she took a beat of twenty or thirty yards in the swamp, pecking and apparently feeding. At the end of this beat she stood still for a quarter of an hour, sometimes pecking and sometimes motionless, but showing no symptoms of suspicion of my whereabouts, and, indeed, no manifest sign of fear. At length she turned back and passed her nest a few paces in the opposite direction, but soon came into it; she arranged with her beak the materials of the nest, or the eggs, or both; she dropped her breast gently forwards; and as soon as it touched, she let the rest of her body sink gradually down. And so she sits with her neck up and her body full in my sight, sometimes preening her feathers, especially of the neck, sometimes lazily pecking about, and for a long time she sits with her neck curved like a Swan's, though principally at its upper part. Now she turns her head backwards, puts her beak under the wing, apparently just in the middle of the ridge of the back, and so she seems fairly to go to sleep. While she sits, as generally while she walks, her plumes are compressed and inconspicuous. . . . .

"I must not go into long particulars concerning the nest of 1854 in *Kharto uoma.* I found the two eggs on the

22nd of May, in a spot only two feet from the nest of the preceding year. It consisted of not more than a handful or so of whitish sedge grass, about twenty inches across, and two or three inches only above the level of the water of the submerged parts of the marsh, close to the edge of which it was situated. There was a kind of creeping moss about it, and one or two very low-lying shoots of sallow.

"It was placed in an open part of the middle of the south-east wing of the marsh. I have a memorandum that there was not then a leaf unrolled, the only visible signs of summer being a kind of *Carex* coming into flower on the hummocks; and yet the nights were quite as light as the day. I kept watch at the distance of nearly half a mile; but unfortunately the smoke of my fire blew towards the nest. I saw a Crane go sailing down, and afterwards the pair walking together, when they indulged in a minuet or some more active dance, skipping into the air as the Demoiselles sometimes do in the Zoological Gardens. Once or so I saw the beak of one pointed perpendicularly to the sky; and a couple of seconds afterwards the loud trumpet struck my ear. It was two or three o'clock in the morning before a bird came on to the nest; and even then she was soon off, but again came back, sitting always with her head up. She left it very wild when at last we advanced from our bivouac. In this watch I saw and heard many interesting birds, amongst them a Hen-Harrier (*Circus cyaneus*). Also a pair of Goshawks (*Astur palumbarius*) dashed into a tree close over my head, the Crane still visible in the distance. These eggs were rather smaller than the pair from *Iso uoma;* two other nests which I have since obtained in Lapland have eggs as big as those which are said to come from Germany, and vary as they do. I had the pleasure in August 1857 of showing Mr. Frederick Godman and his brother Percy a nest near Muonio-vaara, from which eggs were taken the same year, and a young one fledged, from the same marsh at least, if not from the same nest as in 1856. Their wading to this nest, known to be empty, amidst swarms of greedy gnats, was a satisfactory proof of zeal."

The Crane having a strong and thick muscular stomach, feeds largely upon grain, fenny seeds and bents; and in Spain it is very partial to the large sweet acorns, so much so that in the Dehesa de Remonte, in Andalucia, war was declared against the species, owing to its interfering with the fattening of the swine which were fed there. About Swatow, in Southern China, Mr. Swinhoe found that, during their winter sojourn, the Cranes fed chiefly upon the tubers of the sweet potato (*Batatas edulis*); and in the sandy plains of the Punjaub, Mr. Hume has observed these birds boring into the water-melons.*

Cranes, when taken young, become amusing, albeit somewhat dangerous, pets; and so long ago as 1500, we find in an inventory of Serjeant Keble's goods, dated 6th July of that year, three Cranes valued at five shillings each.† Their peculiar habit of "dancing" is well known, and may be frequently observed in the Gardens of the Zoological Society, although this species appears less addicted to this display than some of its congeners.

The singular structure of the windpipe and its convolutions lodged between the two plates of bone forming the sides of the keel of the sternum in this bird have long been known. The first illustration on the next page is a representation of the breast-bone of a young male Crane, in which the trachea, or windpipe, quitting the neck of the bird, passes downwards and backwards between the branches of the furcula, or merrythought, towards the inferior edge of the keel, which is hollowed out to receive it; into this groove, formed by the separation of the sides of the keel, the trachea passes, and is firmly bound therein by cellular membrane, and after making three turns, passes again forwards, then upwards, and ultimately backwards to be attached to the two lobes of the lungs by the bronchial divisions.

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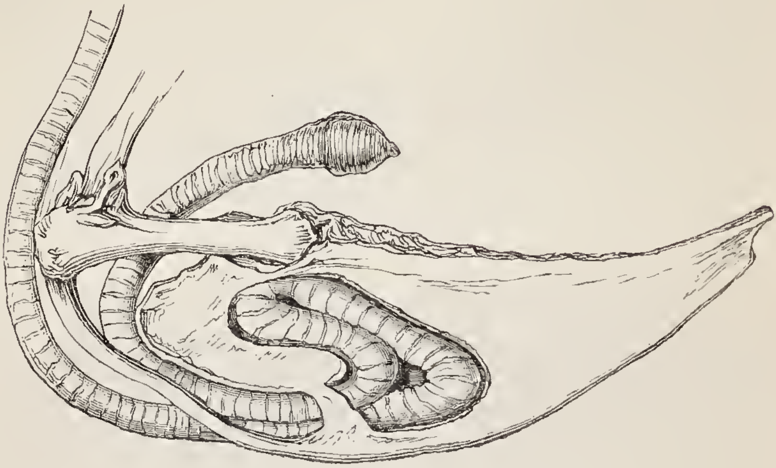
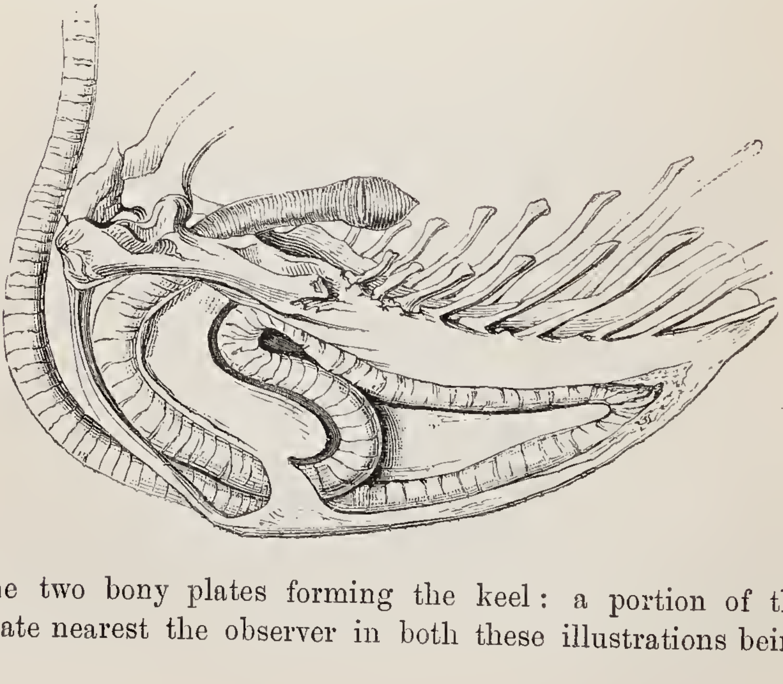
* On the 27th May, as the Editor was studying the colours of the soft parts in two Cranes, presumably a pair, from Lulea in Finland, presented in 1880 to the Zoological Gardens by Mr. Norman W. Shairp, the darker bird, probably the male, was observed to be stalking a sparrow in the enclosure. The drawn-in neck shot out to its fullest extent: there was a snap and a faint squeak; for a minute or so the sparrow was battered against the ground and then swallowed whole. The other bird got highly excited during this operation, and, after executing a wild dance, made an ineffectual attempt to catch another sparrow as it flew over.

† 'Gentleman's Magazine,' vol. 38, p. 257.



The second representation is taken from the sternum of an old female Crane, and exhibits the trachea still farther extended, and occupying nearly the whole cavity between



the two bony plates forming the keel: a portion of the plate nearest the observer in both these illustrations being represented as cut away, to shew the character and depth of the insertion.

It will be observed that the furcula, or merrythought, is not here a single, slightly-attached bone, but has the point of union of the two branches firmly ossified to the keel, or may be considered as a prolongation of the anterior portion of the keel itself extended to the head of each clavicle, and affording a firm support to the wings.*

In the adult male, the beak is greenish-horn, flesh-coloured at the base, lighter in colour towards the point; the irides reddish; the forehead black; the crown red and warty; nape and upper neck, dark bluish-ash; chin, throat, and front of the neck, of the same dark colour, but descending four or five inches lower in front; from the eye, over the ear-coverts, and downwards on the side of the neck, dull white; general colour of the back, wings, rump, tail-feathers, and all the under surface of the body, ash-grey; wing-primaries black; the tertials elongated, the webs unconnected, and reaching beyond the ends of the primaries. The well-known plumes of the Crane are these tertial feathers, with their unconnected webs forming long hair-like filaments, which the bird can elevate or depress at pleasure. They were formerly much worn as ornaments on the head. These and the tail-feathers are varied and tipped with bluish-black; under surface of wings and the axillary plume light grey; legs and toes bluish-black; claws black.

The whole length of the bird described is four feet. From the carpal joint to the end of the wing, twenty-one inches; the first quill-feather a little shorter than the fourth, but a little longer than the fifth; the second and third feathers nearly equal in length, and the longest in the wing. The beak measures four inches and a half; the tarsus nine inches, the bare part of the leg above it four inches.

The sexes, when old, are nearly alike in plumage, but the males are larger and rather darker than the females. Young birds have less variation in colour about the head; the ash-grey plumage of the body is mixed with dull brown, and the elongated plumes of the hinder parts are comparatively undeveloped. They do not breed until their third year.

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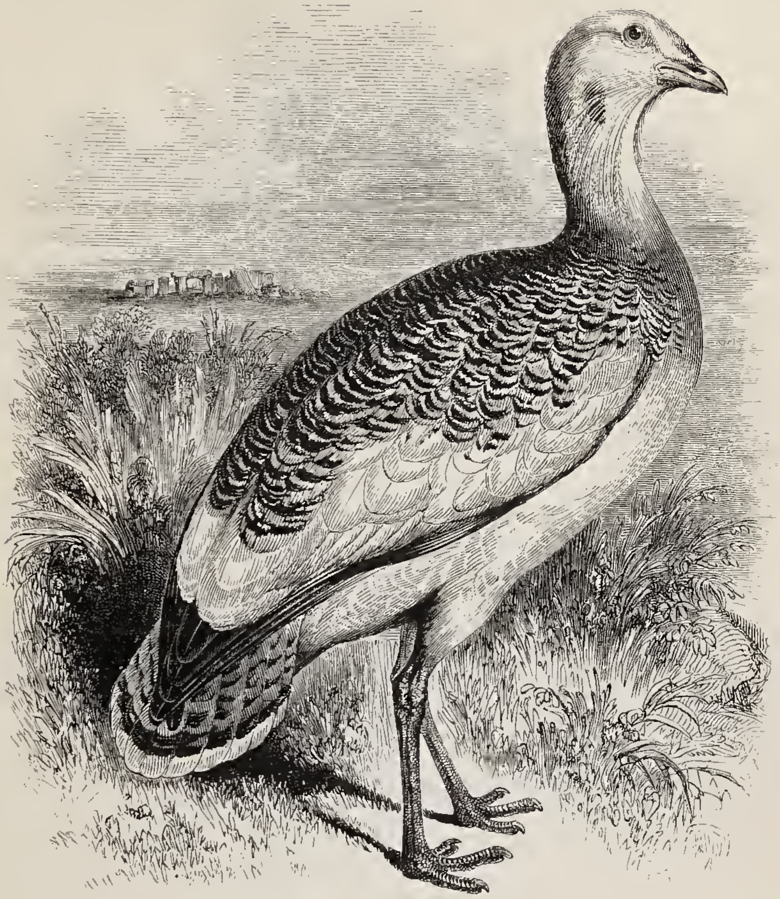
* For important observations on the Convolutions of the Trachea in the *Gruidæ* and in some other families, see Mr. W. B. Tegetmeier's Appendix to Blyth's 'Monograph of the Cranes' (1881).

A male example of the Numidian or Demoiselle Crane (*Grus virgo*), was shot at Deerness, East Mainland, Orkney, on May 14th, 1863, and a companion bird was pursued, but not obtained (Zool. 1863, p. 8692). The above specimen subsequently became the property of Mr. W. Christy Horsfall, of Horsforth-Low Hall, near Leeds. In 'Science Gossip' of March 1st, 1876, is the brief statement that another example of this species was picked up dead on the banks of the river Cale, near Wincanton, Somersetshire. The Demoiselle Crane is a bird which has a wide range through Africa, Asia, and Southern Europe, and it has been recorded as having occurred during the last half century: once in Silesia, twice in Sweden, and once in Heligoland: it is also a species frequently kept in confinement, and there is a possibility that the individual in question may have escaped. The late Mr. Gould has not included it in his 'Birds of Great Britain'; and it has been placed in brackets by the Committee of the British Ornithologists' Union, entrusted with the compilation of the 'List of British Birds.'

A specimen of the Balearic Crane (*Balearica pavonina*) was recorded by Mr. R. Gray (Ibis, 1872, p. 201), who examined the specimen, as having been shot near Dalry, in Ayrshire, on the 17th September, 1871. This, again, is a bird often kept in confinement, and which even as a straggler has seldom, if indeed ever, visited the northern shores of the Mediterranean; its home being Northern and Western Africa.

ALECTORIDES. *OTIDIDÆ.*



OTIS TARDA, Linnæus.[*]

THE GREAT BUSTARD.

Otis tarda.

OTIS, *Linnæus*[†].—Bill moderate, straight, depressed at the base, the point of the upper mandible curved. Nostrils a little removed from the base, lateral, oval, and open. Legs long, naked above the tarsal joint. Toes three, all directed forward, short, united at the base, and edged with membrane. Wings of moderate length, in form rather rounded; the third quill-feather the longest.

THOSE who are desirous of ascertaining what was known of the Great Bustard in more ancient times, may consult the works of Ælian, Albertus Magnus, Aldrovandus,

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[*] Syst. Nat. Ed. 12, i. p. 264 (1766).

[†] *loc. cit.*

Aristotle, Athenæus, Belon, Oppian, Pliny,* and Plutarch; but for the purposes of the present work it will suffice to consider more recent authorities, especially those who treat of the former existence of this magnificent bird in our own islands. In the melancholy task of tracing the gradual extirpation of the largest of the indigenous British species, recourse has been had to the stores of information published by Mr. W. E. Clarke (Handbk. Yorkshire Vertebrates), and particularly by Mr. H. Stevenson (Birds of Norfolk, ii. pp. 1–42), and the latter in his turn has availed himself of the accumulated experiences of Professor Newton and others, who, from long residence in the Bustard-country, were familiar with the bird by tradition and observation.

With the comparatively peaceful times ushered in by the accession of the Tudor sovereigns, the cultivation and enclosure of waste lands made rapid strides incompatible with the welfare of the Great Bustard, but down to the time of Henry VIII. it inhabited all the undulating plains and wolds from the British Channel to the Firth of Forth. An early reference to this bird appears in the Earl of Northumberland's regulations, in 1512, for his 'Castles of Wresill and Lekinfield in Yorkshire,' wherein occurs the observation: "Item, Bustardes for my Lordes own Mees at Principal Feestes ande non other tyme Except my Lordes comaundment be otherwyse." The first British author who gave any account of the bird wrote of it at the northern limit of its range, for it is Hector Boethius, who says, in 1526:—"Besides these we have moreover another foule in Mers [the flat land between the Lammermuir Hills and the Tweed], more strange and uncouth than all these afore mentioned, called a Gustard, fully so great as a Swanne, but in colour of feathers and taste of fleshe little differing from a Partriche, howbeit these byrdes are not verie common, neyther to be seene in all places; suche also is their qualitie, that if they perceive their egges to have bene touched in theyr absence by man's hand (which lie commonly on the bare earth), they forsake those nestes and lay in other places."* The next allusion comes from the latest stronghold of the Bustard in this country, namely, from Norfolk; the often quoted Household Books of the L'Estranges of Hunstanton having the following entries, 1527: "The xljst Weke, Wedynsday. It. viij malards, a bustard and j hernsewe kylled w^{t} ye crosbowe"; and in 1530, "Itm. in reward the xxvth day of July to Baxter's svnt of Stannewgh for bryngyng of ij yong busterds ij*d.*"

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* Pliny, Hist. Nat. x. cap. 29, says, "Quas Hispania aves tardas appellat, Græcia otidas." The name *Bistard*, or *Bustard*, has generally been accepted as a corruption of the words *Avis tarda*, indicative of the bird's slowness in taking flight, but to this derivation some recent authorities object.

In 1534 the eggs of Bustards were specified in the Act for the protection of Wild Fowle (25th Henry VIII.), the penalty being the same as in the case of the Crane, already mentioned; and ten years later Dr. William Turner speaks of the Bustard as a resident species. The following extracts from Dugdale's *Origines Juridiciales,* as exhibiting the prices of various kinds of game provided for a feast given in the Inner Temple Hall on the 16th of October, 1555, the third year of Philip and Mary, are not without ornithological interest:—namely, Bustards, 10*s.* each; Swans, 10*s.*; Cranes, 10*s.*; Pheasants, 4*s.*; Turkeys, 4*s.*; Turkey chicks, 4*s.*; Capons, 2*s.* 6*d.*; Pea chickens, 2*s.*; Partridges, 1*s.* 4*d.*; Plovers, 6*d.*; Curlews, 1*s.* 8*d.*; Godwits, 2*s.* 6*d.*; Knots, 1*s.*; Pigeons, 1*s.* 6*d.* a dozen; Larks, 8*d.* a dozen; Woodcocks, 7*s.* 8*d.* a dozen; Snipes, 2*s.* a dozen.

The Dr. Thomas Muffet, previously cited when treating of the Crane, writing in Wiltshire prior to 1590, makes the following quaint remarks:—

"*Bistards* or *Bustards* (so called for their slow pace and heavy flying), or, as the Scots term them, *Gusestards,* that is to say *Slow Geese,* feed upon flesh, Livers, and young Lambs† out of sowing time, and in harvest time, then they feed upon pure corn. In the Summer, towards the ripening of corn, I have seen half a dozen of them lie in a Wheat-field fattening themselves (as a Deer will doe) with ease and eating. . . Chuse the youngest and fattest about Allhalow tide (for then they are best), and diet him a day or two . . . ; then let him bleed to death in the neck veins, and having hung three or four days in a cool place out of the moonshine either rost or bake it as you do a Turkie, and it will prove both a dainty and wholesome meat."

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* The Description of Scotlande, in Holinshed's Chronicles, 1st Ed. i. p. 10 (1577).

† This remark evidently arose from a confusion—not uncommon at the present day—between the names *Bustard* and *Buzzard!* During the visitation of 1870-71, Bustards were mentioned in print, in Devonshire and elsewhere, as 'Wild Turkeys'—a pardonable error; but the climax was reached at Barnstaple,

Drayton (Poly-olbion, 25th Song) speaks of

> "The big boan'd *Bustard* then whose body bears that size
> That he against the wind must runne ere he can rise."

In the printed catalogue of the contents of the Tradescant Museum, preserved at South Lambeth, in 1656, is, "The Bustard, as big as a Turkey, usually taken by greyhounds on Newmarket Heath"; and Merrett, in his *Pinax rerum naturalium Britannicarum*, in 1667, includes the Bustard as taken on Newmarket Heath and about Salisbury.

A little later the celebrated Sir Thomas Browne speaks of "*Bistardæ* or Bustards, not unfrequent in the champian and fieldy part of this country [Norfolk]. A large bird, accounted a dainty dish, observable in the strength of the breast-bone and short heel. Lays an egg much larger than a turkey." (Wilkin's Ed. iv. p. 318.)

Willughby, in Ray's Edition of the 'Ornithology' (1678), says that "on Newmarket and Royston Heaths, in Cambridgeshire and Suffolk, and elsewhere in Wasts and Plains, they are found with us"; and in reference to Bustards, as formerly inhabiting that part of the country, Addison's Spectator, No. CCCX., for Tuesday, March 4th, 1712, contains an advertisement, of which the following is a copy:—"HEYDEN in ESSEX, near WALDEN and ROYSTON, the seat of Sir Peter Soame, Bart., deceased, situate on a gentle hill, with a very large and pleasant prospect, fair gardens, canals, fish

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where Mr. Gatcombe saw a man with some feathers in his hat, to one of which the owner pointed with pride, saying, "This here, Sir, belonged to one of them Turkey-buzzards"! (Zool. s.s. p. 2475.)

ponds, dove coate, and all sorts of offices without door, woods of large timber, and where is all game in great plenty, even to the Bustard and Pheasant, is to be let, furnished or unfurnished, for 16 years. Enquire at Mr. Chus, in Bartly Street, Piccadily, or at Mr. Cooper's, at the Blue Boar, in Holborn." To this the Author may add, that in Melbourne, the parish next below Royston, there is a piece of land which is still known by the name of Bustard-Leys; and Dr. George Thackeray, the Provost of King's College, Cambridge, sent him word that Mr. Townley, the father of Mr. Greaves Townley, of Fulbourne, told him that for some years after he first went to live there, Bustards regularly bred on his estate.

In Morton's 'Natural History of Northampton,' p. 425 (1712), occurs the following:—"The Bustard, *Otis, seu Tarda avis*, another bird of the poultry kind, is so uncommon with us, that I never heard of more than two of them here, one of which was shot by Captain Saunders in Moulton Field."

By the end of the last and the beginning of the present century, Bustards had become exceedingly scarce in their southern haunts. In Devonshire, where its occurrence has been recorded by Montagu, it was probably a straggler. White of Selborne, in that portion of his Journal published by Mr. Jesse in the second volume of his 'Gleanings in Natural History,' says, "Spent three hours of this day, November 17, 1782, at a lone farm-house, in the midst of the downs between Andover and Winton. The carter told us that about twelve years before he had seen a flock of eighteen Bustards on that farm, and once since only two." White adds in another place, "Bustards when seen on the downs resemble fallow deer at a distance." In Daniel's 'Rural Sports' it is stated, "that on the 29th of September, 1800, Mr. Crouch, of Burford, shot a hen Bustard on Salisbury Plain. This bird was killed at the distance of forty yards with a common fowling-piece, and with such shot as is generally used for partridge-shooting. There were two other Bustards in company with the one shot, neither of which appeared to be hurt."

That the native race was now nearly extinct on Salisbury Plain, is shown by the following letter, written in 1801-1802, and communicated by Mr. John Britton:—

"A man, about 4 o'clock of a fine morning in June, 1801, was coming on horseback from Tinhead to Tilshead. While at, or near, an enclosure called Asking's Penning, one mile from the village of Tilshead, he saw over his head, about sixty yards high, as near as he could estimate, a large bird, which afterwards proved to be a Bustard. The bird alighted on the ground immediately before the horse, which it indicated a disposition to attack, and in fact very soon began the onset. The man alighted, and getting hold of the bird endeavoured to secure it; and after struggling with it nearly an hour he succeeded, and brought it to Mr. J. Bartley, of Tilshead, to whose house he was going. Not knowing the value of such a bird, he offered it to Mr. Bartley as a present; but Mr. Bartley declined to accept it as such, though he much wished to have it, and after repeated solicitations prevailed on the man to receive for it a small sum, with which he was perfectly satisfied. During the first week that Mr. Bartley had this bird in his possession it was not known to eat anything; however, at length it became very tame, and would at last receive its food from its patron's hands, but still continued shy in the presence of strangers. Its principal food was birds, chiefly sparrows, which it swallowed whole in the feathers with a great deal of avidity. The flowers of charlock and the leaves of rape formed also other parts of its food. Mice it would likewise eat, and in short almost any other animal substance. The food on passing into the stomach was observed to go round the back part of the neck.

"Mr. Bartley is of opinion that the idea of the Bustard's drinking is erroneous; in support of which he says, that during the time this Bustard was in his possession, which was from June till the August following, it had not a drop of water given it, after two or three weeks at first. This fact he considers as a proof that the generally-received opinion of a Bustard's drinking is untrue. This bird was judged to weigh upwards of 20 lbs., and to measure between the extremities of its wings, when extended, about 5 feet, and its height was about 3½ feet. In August Mr. Bartley sold this noble bird to Lord Temple for the sum of thirty guineas.

"The Bustard inhabits the extensive downs of Salisbury Plain; but its race is now almost extirpated. It is thought that not more than three or four are now remaining. Some time in the last summer (viz. 1801), while Mr. Bartley had this bird in his possession, a nest, supposed to belong to this bird, or at least to his mate, for Mr. Bartley's bird was judged to be a male, was found in a wheat-field on Market Lavington Down. It contained two eggs; they sometimes lay three, though very seldom; they are about the size of those of a goose, of a pale olive-brown, with small spots of a darker hue. The nest was made upon the ground, by scratching a hole in the earth, and lined with a little grass. The eggs were rotten, and had probably undergone a period of incubation.

"An instance of a Bustard attacking a human being, or even a brute animal, of any considerable size, was, I believe, never before heard of; and that two instances of this kind should occur so nearly together may be considered very remarkable. About a fortnight subsequent to the taking of this bird, Mr. Grant, a respectable farmer of Tilshead, was returning from Warminster Market, and near Tilshead Lodge, which is something more than half a mile from the village, was attacked in a similar manner, by, as it is thought, the mate of the same bird. Mr. Grant's horse being rather high-mettled, took fright, became unmanageable and ran off, and consequently Mr. Grant was compelled to abandon his design of endeavouring to capture the bird." *

By the time that Montagu wrote, in 1813, none had been seen for several years; and as regards both Wiltshire and Dorsetshire, the first ten years of this century probably saw the last of the Bustards indigenous to that district. They

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* Ælian, Athenæus, Plutarch, and Oppian, mention the affection of the Bustard for the Horse.

had already disappeared from Hampshire; and as regards Sussex, of which Gilbert White, writing to Daines Barrington on the 8th of October, 1770, from Ringmer, near Lewes, says:—"There are Bustards on the wide Downs above Brighthelmstone," the native race must shortly afterwards have become extinct. Mr. Knox, in his 'Systematic Catalogue of the Birds of Sussex,' published in 1855, says, p. 222, "I have met with some very old people who, in their younger days, have seen flocks of this noble bird on the Downs."

From the downs of Berkshire, Hertfordshire, and Cambridgeshire, the Great Bustard passed away unrecorded, a male killed near Ickleton being, perhaps, the last of the indigenous birds in the latter county. Nor is it known when it vanished from the Wolds of Lincolnshire. In Boswell's 'Life of Johnson,' there is a letter from the great lexicographer to his friend Bennet Langton, of Langton, near Wragby, in that county, dated 9th January, 1758, in which he says:—"I have left off house-keeping, and therefore made presents of the game you were pleased to send me. The Pheasant I gave to Mr. Richardson, the Bustard to Dr. Lawrence"; and down to about 1825 it appears to have bred on the estate of Sir Charles Anderson at Hawold. Across the Humber, it would appear, from the investigations of Mr. W. E. Clarke, who has carefully collected and sifted the evidence, that the Bustard continued to exist on the Eastern Wolds so long as they remained as undulating barren sheep-walks. The southern portion was the first to be deserted, and the extension of tillage, the introduction of early and artificial crops, and the spread of enclosures, inevitably led to the decrease of the Bustards in their remotest refuge about Flixton, Hunmanby, and Reighton. It is believed that the existence of the indigenous Great Bustard in Yorkshire ceased in 1832 or 1833, when the last hen bird was trapped on Sir W. Strickland's estate at Boynton, near Bridlington.*

Suffolk and Norfolk, which, strange to say, had hardly been mentioned by authors down to the present century, now remained the last two counties where the indigenous Bustard maintained a footing. In the former the head-quarters of one "drove" were on the open country lying between Icklingham Heath, Brandon and Thetford, and from the latter a certain amount of communication appears to have been kept up with the Norfolk "drove" which frequented the neighbourhood of Swaffham. In the Suffolk district, North Stow Heath and Icklingham Heath seem to have been the chief resorts; and up to 1812 the "drove" appears to have consisted of some thirty or forty individuals. About this period commenced the practice of planting long belts of trees with the object of sheltering the arable land from the pernicious effect of the wind acting upon a light sandy soil; and the result of this agricultural improvement was soon manifested by the rapid diminution in the numbers of the Bustards. Although protected by the Duke of Grafton at Euston, Mr. Newton at Elveden, and Messrs. Gwilt at Icklingham, other proprietors permitted and even encouraged their destruction, and a keeper was even allowed to rig-up a masked battery of duck-guns concentrated upon a spot strewn with turnips: a cord half a mile long being attached to the triggers of the guns, and the shepherds and farm-labourers being duly instructed in the art of working this infernal machine. In 1832 a nest, believed to be the last in Suffolk, was found on the borders of Thetford Warren, and recorded by the late Mr. J. D. Hoy (Mag. Nat. Hist. 1833, p. 150), who stated that the old bird carried off her young in safety, and that a male and two females were subsequently seen together on the same heath. This nest was situated in a field of rye, as were nearly all the nests pointed out by eye-witnesses.

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* 'Handbk. Yorkshire Vertebrates,' pp. 65-68.

In Norfolk the late Mr. J. D. Salmon has recorded (Mag. Nat. Hist. 1834, p. 458) that "in the spring of 1832, three females resorted to Great Massingham Heath, in Norfolk, for incubation. Their eggs consisted of two pairs and a single one. These were taken away, under the impression that as there was no male bird, they were good for nothing; but the male is said to live apart after the female is impregnated." Mr. William Borrer, of Cowfold, then an undergraduate of Peterhouse, has a very fine female, which was killed on the 26th of January, 1838, whilst feeding in a turnip field at Dersingham, near Castle Rising. The base of each of the feathers on the breast of this bird was of a delicate rose colour; a hue which Belon and Graves had already noticed, and which has since been observed in many individuals of this and of other species. In the same year another, and probably the last indigenous British bird, was obtained, and was thus recorded at the time by Mr. J. H. Gurney:—" May, 1838. Great Bustard. A specimen of this bird was lately killed at Lexham, near Swaffham. The person who brought it to Norwich said there were several more female Bustards in the neighbourhood, but no male. On dissection the stomach was found to contain a quantity of green substance resembling clover, and an egg was found in the ovarium (for it was a female), nearly the full size, but without a shell; and from the inflamed state of that organ it was supposed that some eggs had been laid already. The weight and dimensions of the bird were as follows, viz.:—Weight, 10 lbs. 10 oz. Length 2 ft. 9 in.; from tip to tip, 5 ft. 10 in.; of tibia, 8 in.; of tarsus, measured to the heel, 6 in. The plumage was beautifully freckled on the back, but was much worn, so that the bird evidently had not moulted for some time. It was remarked that the down at the base of the feathers was of a beautiful rose colour" (Zool. s.s. p. 4724). This bird now forms part of the fine series of Norfolk Bustards in the Norwich Museum.

It is supposed that during these latter six years the few remaining hens had dropped their eggs at random, without forming nests; but there was no cock bird left, and thus the indigenous race became extinct. The previous cause of the diminution of the species in Norfolk was, however, the new system introduced into agriculture. To quote Mr. Stevenson's own words:—" The hen Bustard nearly always laid her eggs in the winter-sown corn, which in former days was, almost without exception, rye, sown broadcast after the old fashion. As the mode of tillage improved, wheat was gradually substituted for rye; and, at the price that grain fetched in those days, the desire of not using more seed than was absolutely necessary brought about the invention of the drill, by means of which corn, thus sown, was capable of being kept free from weeds with much greater facility. First, parties of children were sent into the fields to perform this operation, and then speedier, if not more thorough, execution was obtained by the use of the horse-hoe. Thus every nest made by a Bustard in a wheatfield was sure to be discovered—perhaps in time to avert instantaneous destruction from the horses' feet or the hoe-blades, perhaps (and this probably much the more often) only when the eggs had been driven over and smashed and their contents were pouring out on the ground. But even in the first case, instantaneous destruction being avoided, the eggs were generally taken up by the driver of the hoe (in defiance of the act of 25th Henry VIII., which, though often enforced when smaller and less valuable species were concerned, seems in the case of the Bustard to have been regarded as a dead letter), and carried by him to his master or mistress. If they were not chilled by the time they reached the farmhouse they were probably put under a sitting hen; for all persons seemed to imagine, till they tried, that the rearing of young Bustards was as easy as the rearing of young Turkeys. If, however, there was no hope of success in this direction, they appear often to have been preserved as natural curiosities, to lie, with grotesquely shaped flints and petrified *Echini* (the 'fairies' loaves' of the district), on the parlour mantelpiece or bookshelf till they met with the usual fate of such fragile articles, though some four or five specimens are known to have escaped all such risks and are actually still in existence. But in either of these cases the result was the same. No young birds grew up to fill the gaps made in the ranks of the old ones according to the common course of nature, to say nothing of those caused by occasional violent deaths; for although Mr. Hamond (following the example of his father before him) and most of his neighbours allowed no molestation of the Bustards on their estates, yet there is little doubt that every now and then one fell to the gun, or was caught in the gin of a depredator, while the smaller proprietors were by no means actuated by any feelings for the perpetuation of the stock, and a few of the larger ones occasionally wished to supply themselves or their friends with specimens for their collections or even for edible purposes. Not a thought of the extermination of the species seems to have passed through their minds. Either they were entirely indifferent about the matter, or else they believed that since, as long as they could remember, there had always been Bustards on their brecks, therefore Bustards there would always be. It is to be remarked that cock birds are said to have been comparatively scarce in this drove, three being the most that are spoken to by any eye-witness, and, as has just been stated, when the numbers of the drove were much diminished, cocks were entirely wanting. These observations probably refer to the old cocks, which so greatly surpass the hens in size; for it must be remembered that, as is known through foreign observers, the male Bustard is several years in attaining its full growth, and until then it cannot be readily distinguished from the female at a distance."

Very full particulars are given by Mr. Stevenson of the specimens of birds and eggs obtained in Norfolk and Suffolk, and in tracing their history many details of the highest interest are recorded, but space will not admit of further quotation. The finest series of Norfolk, or indeed of British Bustards, appears to be in the collection made by the late Mr. Robert Elwes, of Congham House, near Lynn. As regards the date of extirpation, it may be added, that although 1838 is the probable one, there are some persons who believe that a bird or two lingered to 1843 or even 1845.

In Scotland, the Great Bustard had long been extinct, and it was probably a mere straggler from the Continent which was shot in Morayshire, in 1803, where another was also obtained, as recorded by the Rev. Mr. Gordon in his 'Fauna of Moray.' As regards Ireland, it is mentioned by Smith, in his 'History of Cork,' in 1749, but there appears to be no other evidence of its existence in that island.

Although the Great Bustard had ceased to be an indigenous British species, stragglers from time to time made their appearance, and naturally, in the majority of cases, were observed on the open and uncultivated districts suited to their habits. In March, 1843, a female was shot on moorland between Helston and the Lizard; another, also a hen bird, was shot near St. Austell, in January, 1854, and—to continue the list of occurrences in Cornwall—yet a third female was captured alive near Looe, on the 12th December, 1879. One, believed by its size to be a female, was seen on Salisbury Plain by Mr. G. R. Waterhouse, of the British Museum, in the month of August, 1849, when returning to Salisbury with a party of friends from a visit to Stonehenge, the bird being seen several times on the wing during an interval of eight or ten minutes (Zool. p. 2590). A second bird, also a female, was shot in January, 1850, at Lydd, in Romney Marsh, and passed into the possession of Dr. Plomley (Zool. p. 2700). The third was shot on the 31st of December, 1851, at Bratton Clovelly, in North Devon, and became the property of Mr. J. G. Newton, of Millaton Bridestow (Naturalist, 1852, p. 33); and on the 8th of February, 1853, one was killed in a turnip field at Lees Hill, Lannercost, Cumberland, and came into the possession of Mr. Joseph Mowbray, at Brampton (Zool. p. 4407).

On Thursday, January the 3rd, 1856, as a boy, about nine years of age, was on his way by the Salisbury road, from Hungerford, in Berkshire, to a lone farm about a mile off, with his brother's dinner at twelve o'clock, he saw a large red bird on the ground, fluttering about near the edge of a piece of turnips. He went close up to it, and observed that it had a broken leg; he tried to lay hold of it, but the bird "pecked at him, bit his fingers, and put out his great wings." He caught hold of one of them, and dragged the bird along the ground by it for nearly a quarter of a mile to the farm, where a farming man killed it for him, by breaking its neck, that the boy, as he said, might carry it easier. The boy says the bird was quite clean when he first saw it, but that he made it dirty by dragging it along the field. The bird passed by sale through the hands of two or three persons, and came at length into the possession of Mr. W. H. Rowland, of Hungerford, who sent it to Mr. Leadbeater, of Brewer Street, to be preserved.

Mr. Rowland called upon the Author on Saturday, the 12th instant, and went with him to Brewer Street, to inspect the specimen. Mr. Leadbeater, after the bird was skinned, had examined the inside of the body, and had saved the sexual part in spirit, which showed that it was a young male. The bird appeared to be about eighteen or twenty months old, and was believed to be a bird of the season of 1854. The fracture of the bone of the leg, with the skin torn through, about half way between the true heel and the knee, did not appear as if produced by gun-shot, nor was there a single perforation in any other part of the skin of the bird. The wound was too high up to have been caused by a trap, and perhaps the accident had occurred by the Bustard getting his leg entangled among the bars of sheep hurdles, and making great efforts to get loose. The wound was apparently of some days' standing, and had bled considerably. That the bird was weak and exhausted may be safely inferred from its allowing a boy to drag it along the ground by the wing, so bold and pugnacious as this species is known to be when in health; there was, moreover, very little blood within the skin where the neck was broken. The soft parts had been irrecoverably made away with, or the neck would have been examined with great interest.

In the same year (1856) two frequented Burwell Fen, in Cambridgeshire, from the end of January to the 1st of March (Zool. pp. 5063, 5279); a young male was killed at Romney in 1859; a female on Rufforth Moor, near York, in February, 1861 (Zool. p. 7507); and another female was picked up dead, but still warm, near Bridlington Quay, on November 11th, 1861 (Zool. p. 9442). Individuals were observed in Lincolnshire in 1866 and a few years previously; and in January, 1867, one was fired at unsuccessfully by Captain Rising, in the Horsey marshes, Norfolk. Between the autumn of

1870 and the spring of 1871—at the time of the Franco-German War, and a winter of exceptional severity on the Continent—a considerable number of Bustards visited Great Britain. On the 27th September, whilst travelling from Bishops Lydeard to Wells, Mr. J. E. Harting saw one of these birds on the flat country by Shapwick ('The Field,' 14th January, 1871); and three, out of seven, were obtained in the following December at Braunton, North Devon. On the 28th of that month a female was shot at Feltham, in Middlesex, the first occurrence on record in that small county (*ibid.* January 7th, 1871). On January 2nd, 1871, a female was killed at Fenham on the coast of Northumberland (Zool. s.s. p. 2510). A female, weighing only 7¼ lbs., was shot on January 23rd on Salisbury Plain, when two others were seen; and a bird, presumably one of the latter, weighing 15 lbs., was obtained on the 26th, near Devizes ('The Field,' January 28th and February 4th). In August, 1873, a Bustard was reported as frequenting the old Suffolk district, on the Wangford and Lakenheath warrens. On the 14th January, 1876, a female was shot on the Downs of Sussex, near Eastbourne (*ibid.* January 22nd), and came into the possession of Mr. T. Monk, of Lewes; and on the 24th of the same month a male took up his abode in a piece of coleseed on a fen belonging to Mr. H. M. Upcher, of Feltwell, near Brandon, who wrote as follows:—"He seemed to consider this field quite as private property, for I do not think he was ever absent for a whole day till the 24th of February. Lord Lilford most kindly sent me a female Bustard, which I turned out on Thursday, February 10th, in the presence of Professor Newton, Messrs. Harting, Salvin, E. Newton, and F. Newcome. The male flew away as I was trying to drive the very tame hen up the field towards him. He returned before we left, in less than an hour, and, although not close together, we left them in the same field. They soon made it up, and Saturday and Sunday they spent side by side, the male bird strutting round the hen, and traping his wings like a Turkey-cock. The fearful weather on Sunday night and the next day proved too much for the tame bird, and on

Tuesday she was found dead in a ditch. On the 21st February, Lord Lilford sent another hen: it was a very stormy day, so I dared not turn her out after the fate of No. 1, but shut her up in a little hut of hurdles and straw, which I had had built for No. 1, but which she would not take advantage of. The next morning the male was not far from the hut, and the keeper went down to let the female out, but he flew away. In the afternoon he passed over the field, but did not alight, and went on to Stockwold; thence to Eriswell and Elveden, where he was seen in the park. This is the last place where I can hear any tidings of him" (Zool. s.s. p. 4882).* On the 29th March of the same year a Bustard, weighing 9¾ lbs., was shot near Stronsay, in Orkney ('The Field,' April 8th, 1876).

In the winter of 1879-1880, besides the Bustard already noted as obtained in Cornwall, one was recorded from Jersey, one from Essex, one from Cambridgeshire, and one from Dorsetshire, all females; also three from Kent, one of which was a male weighing 16 lbs. A similiar visitation occurred in the northern and central provinces of France (Zool. 1880, p. 252), and was attributed by the naturalists and sportsmen of that country to the inclement weather which prevailed at that season.

The Great Bustard is now a rare straggler to the southern portions of Sweden, where it was formerly a partial resident, and its occurrences in Denmark, Holland, and Belgium are merely accidental; but in Northern and Central Germany, especially on open plains, such as those about Leipsic, it is still a resident, excepting in severe winters. In France its head-quarters used to be in the province of Champagne, but the Editor has recently been informed that as a resident species it is now extirpated, although examples are annually obtained in the country. In the Spanish Peninsula the Great Bustard is still abundant in suitable localities, and Mr. C. A. Nicholson, of Balrath Kells, Co. Meath, has contributed the following details:—

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* A more detailed account, by Messrs. Harting and Upcher, and illustrated by woodcuts, appeared in 'The Field' of April 8th, 1876.

"You will perhaps be interested by the following few remarks on the habits of the Great Bustard, as observed by me in the neighbourhood of Seville, where they exist in large numbers.

"The males begin to arrive in the cultivated part of the country at the beginning of February; they come in flocks, varying from seven to fifty-three, the smallest and largest numbers I have seen together at that season of the year. The old birds always go together; those of a year old, which are much smaller, never mix with them. The young birds have neither beard nor pouch.

"The females do not arrive till the beginning of April, and come singly, or at most in pairs: as soon as they arrive the flocks of males begin to break up, and after about three weeks you seldom meet more than three or four old males together, they being very frequently to be met with singly. At this time, on a fine day, they spread their tails like Turkey-cocks, drooping their wings and expanding their pouches. Being perfectly white under the tail, they can be seen at a great distance while in this attitude; I have, however, never seen a female near a cock, as apparently they live quite separate. During the month of May the cocks entirely disappear from the cultivated lands, leaving the hens behind them; they, I have every reason to believe, go down to the extensive grass marshes which stretch along the banks of the Guadalquivir. The young Bustards are hatched in the large corn plains about Seville, and are able to take care of themselves when the corn is cut in July. At the end of that month, when all the corn is cut and no cover remains, the young birds and hens follow the cocks to the *marisma*, as they call these great marshes in Spain.

"The birds are very difficult to shoot, and many a long day I have spent without any success in hunting them about. The only chance is to hide in a ravine or ditch, and send men who know the country round the birds to try and drive them over you. They sometimes succeed in this, but not very often. The heaviest bird I shot weighed 28 lbs.; this was before the hens came, which may perhaps account for this bird being two pounds heavier than any I shot afterwards. The largest bird, from tip to tip of wing, measured 7 feet 3 inches; this bird weighed 26 lbs. The 28 lbs. bird measured but 7 feet 1 inch.*

"The birds of a year old weigh from 8 to 10 lbs., and are much the best to eat. I did not shoot a hen.

"All the birds I shot had their stomachs perfectly crammed with barley, both stalks and ears, the leaves of a large-leaved green weed, and a kind of black beetle. The pouch is surrounded by a layer of fat fully an inch thick. I may add that the Bustards when flushed generally fly two miles or more, sometimes at least a hundred yards high. They never try to run; one that I had winged making the most awkward attempt possible to get away from me, and though a young bird, showing much more disposition to fight than to get away by running. They fly with a regular flap of the wings, and much faster than they appear to go. I cannot imagine greyhounds being able to catch Bustards, though there seems to be good authority for believing they did."

To Italy and to the islands of the Mediterranean the Great Bustard is merely a straggler, but in Greece it is not uncommon, and on the plains of the Danubian Provinces, the South of Russia, and Turkey it is abundant, crossing to Asia Minor in severe weather; and on the plains of Northern Syria it is apparently resident. Its visits to Morocco are rare and irregular, but Loche says that it was formerly common in Algeria, where it is now rare. Passing eastward, it occurs throughout temperate Asia, as far as China, where Mr. Swinhoe obtained it; and Japan, whence Messrs. Blakiston and Pryor have sent specimens to Mr. Seebohm. The bird found in Eastern Siberia has been distinguished by M. Taczanowski, under the name of *Otis dybowskii*, and is described as being smaller than the present species, but with longer moustaches. Mr. Hume states that a flock of five or six Great Bustards has once straggled to Murdan, west of the Indus (Ibis, 1871, p. 404).

* Males have been obtained weighing 34 lbs., and even more.

The Bustard is generally supposed to be polygamous, and even those who oppose this belief, cannot deny that in numbers the females are far in excess of the males. In spring the males fight furiously for the possession of the females, and at Elveden a shepherd, prior to 1820, saw two cock birds so intent on the combat that he ran up and killed one with his staff. The males afterwards live apart from the females, forming small flocks by themselves. The female deposits her eggs in a mere scratching in the ground: in April, in Spain; in May, further north; the complement is two or three, and the exceptional clutches of four and five which have occasionally been found, were probably the produce of two females. The eggs are olive-brown in colour, sparingly and indistinctly blotched with greenish broccoli-brown; they measure about 3 in. by 2·1 in. Incubation lasts rather more than three weeks, and the young are soon able to run and secrete themselves.

The birds feed on green corn, grasses, trefoil, and other vegetables; they also kill and eat small mammals, and, perhaps, small reptiles. In the summer they conceal themselves in standing corn, generally wheat or rye, and later in the season in large fields of high turnips; they also frequent chalk-pits when they are partly overgrown with bushes or rank vegetation.

In the autumn, so far as East Anglia was concerned, the Bustards used to disappear for a time, and Mr. Stevenson remarks that there is positively no precise information respecting their appearance during the months of October and November.

The flesh of the old male is very coarse eating, but that of a fat hen or of a young bird is excellent. During the great heat of August and September, young birds are sometimes run down by horsemen and dogs in Spain, as after two or three low flights they become exhausted, being at that season extremely fat. That they have been captured under similar circumstances in England is probable, and indeed one case is recorded by Mr. Lubbock where the greyhounds came suddenly through a gate, and "chopped" a Bustard;

but that anything like real and successful Bustard *coursing* was ever habitually pursued, is open to doubt, in spite of the statement, dated 1656, already quoted (p. 196). However, in 'The Naturalist's Pocket Magazine, or Compleat Cabinet of Nature' (1799-1800) is the following:—"But though they cannot be reached by a fowling-piece, they are sometimes run down by greyhounds. Being voracious and greedy, they often sacrifice their safety to their appetites; and as they are generally very fat, they are unable to fly without much preparation; when therefore the greyhounds come within a certain distance the Bustards run off, clap their wings, and endeavour to gather under them enough air to rise; in the meantime, the dogs are continually gaining ground, till at last it is too late for flight. However, notwithstanding the sluggishness of their usual pace, they can, when in danger, run very fast, and once fairly on the wing, are able to fly several miles without resting." These, or similar statements, have been popularized by Bewick's well-known woodcut of the Great Bustard being chased by a horseman and a greyhound, and are the source of the belief entertained by many, that this kind of sport was pursued by our ancestors. That Bustards have on rare occasions been found at daybreak so benumbed by a frost following on a heavy dew, as to be unable to fly with ease, seems entitled to belief.

Bustards have on many occasions been kept in confinement, but as yet they have seldom been known to breed in that state. The late Mr. George Hardy, who was house-surgeon to the Norfolk and Norwich Hospital, between 1793 and 1826, appears, from the entries in his journal, to have received at various times a good many eggs, which he placed under a hen; he also received more than one male bird, and it is remembered by Mr. G. S. Kett, a former treasurer of the hospital, that he had three or four birds alive in an enclosure; but as to the actual breeding or even the hatching-out of any of these particular birds, there seems to be no direct evidence. In Tyrol, however, Dr. Althammer records an instance (Bull. Soc. Imp. Acclim. 1861, p. 318) of three eggs being laid in August, 1860, upon which the hen-bird sat, and after twenty-five days' incubation one young one was hatched. A male bird which Lord Lilford received alive from the Continent, and which he kept for more than four years, is described as exceedingly bold and tame, approaching any one who entered the aviary quite fearlessly, making a curious guttural noise. He ate mice, raw meat, worms, snails, wheat, barley, turnip-tops, lettuce and grass, and lived amicably with other birds.

As regards the presence of the much discussed gular pouch in the male Bustard, the following was communicated by the late Professor A. Garrod, Prosector to the Zoological Society, to Mr. H. E. Dresser, for 'The Birds of Europe,' and by his permission is here reproduced :—

"The different points connected with the question as to the existence or non-existence of a gular pouch in *Otis tarda* have excited a degree of attention and a diversity of opinion which can only be accounted for by the difficulty that there is in this country of obtaining a sufficient number of specimens for examination. Several authorities have recorded their very contradictory results ; and Professor Newton's excellent and exhaustive summary (Ibis, 1862, p. 107) left the question as undecided as ever. Dr. W. H. Cullen, of Kustendjie, in Bulgaria, was led from Professor Newton's remarks to re-examine the point ; and in the two specimens of the bird which he dissected, the pouch was well developed. He communicated his results, with drawings, to 'The Ibis' (1865, p. 143) ; and Professor Flower has also examined and described his specimens (P. Z. S. 1865, p. 747). Dr. Murie has further verified the existence of a gular pouch in an adult specimen which belonged to the Zoological Society of London ; and a very good sketch of the open mouth accompanies his paper. The same author also proved the existence of a similarly situated, but smaller, pouch in *Otis kori ;* and he shows that the habits of *Otis australis* render it certain that in that bird the same structure is also largely developed. Through the kindness of Lord Lilford I have had the opportunity of examining a specimen taken from a Spanish example of *Otis tarda*, in which the very capacious pouch is preserved with the tongue, trachea, and œsophagus. This specimen entirely agrees with those described by John Hunter and the other anatomists who have since found it.

"From the facts at present known regarding this subject it may be concluded that a large sublingual air-pouch, which runs down the anterior portion of the neck, is present in the adult of *Otis tarda* and some other species of Bustards during the breeding-season, that in young birds this pouch is not developed, and that during the non-breeding-time this pouch may, and perhaps always does, contract so considerably as to become insignificant.

"If, as it seems probable to me, the pouch contracts and almost disappears in the intervals between the breeding-seasons, the discrepancies in the different accounts may be explained on the supposition that the birds examined were obtained at different times of the year. In a specimen now living in the Zoological Society's Gardens, which 'showed off' well during last summer and early this spring, no orifice can be felt at the present time (June 24th) with the finger, under the tongue, which could lead into any pouch, though the floor of the mouth is felt to be carried a considerable way further back than usual."

Subsequently Professor Garrod found that in an Australian Bustard (*Eupodotis australis*) examined by him, there was no gular pouch, but merely an œsophagus dilatable at will, and greatly inflated during the "show-off."

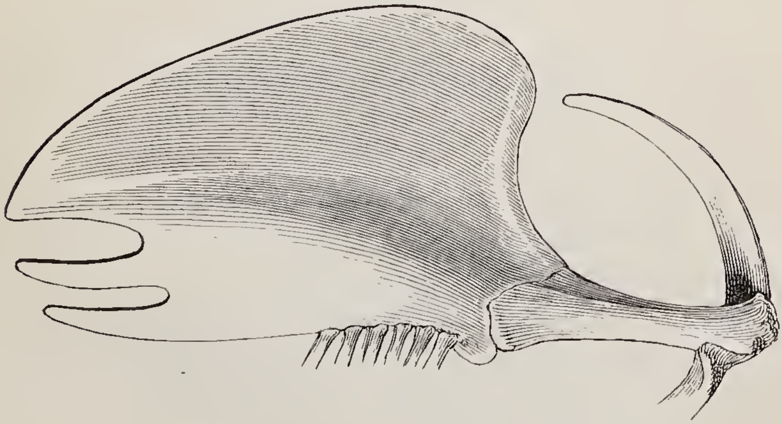
The adult male has the beak clay-brown; the irides hazel; the head and the upper part of the neck pale grey; from the chin, passing backwards and downwards on each side, there is a tuft of bristled feathers, about seven inches long, directed across and partly concealing a vertically elongated strip of bare skin of a bluish-grey colour; the lower part of the neck behind, the back, and upper tail-coverts of an ochreous-yellow or pale chestnut, barred transversely with black; the tail-feathers reddish, barred with black and tipped with white; the wing-coverts and tertials white; the primaries greyish-brown, with white shafts; neck in front covered with long tawny feathers, which become thicker lower down, and form a distinct pectoral band of a rich chestnut; below, and partly concealed by it, a grey band; all the under surface of the body, the thighs, and under tail-coverts white; under surface of the tail-feathers barred transversely with dusky grey; legs, toes, and claws, brown.

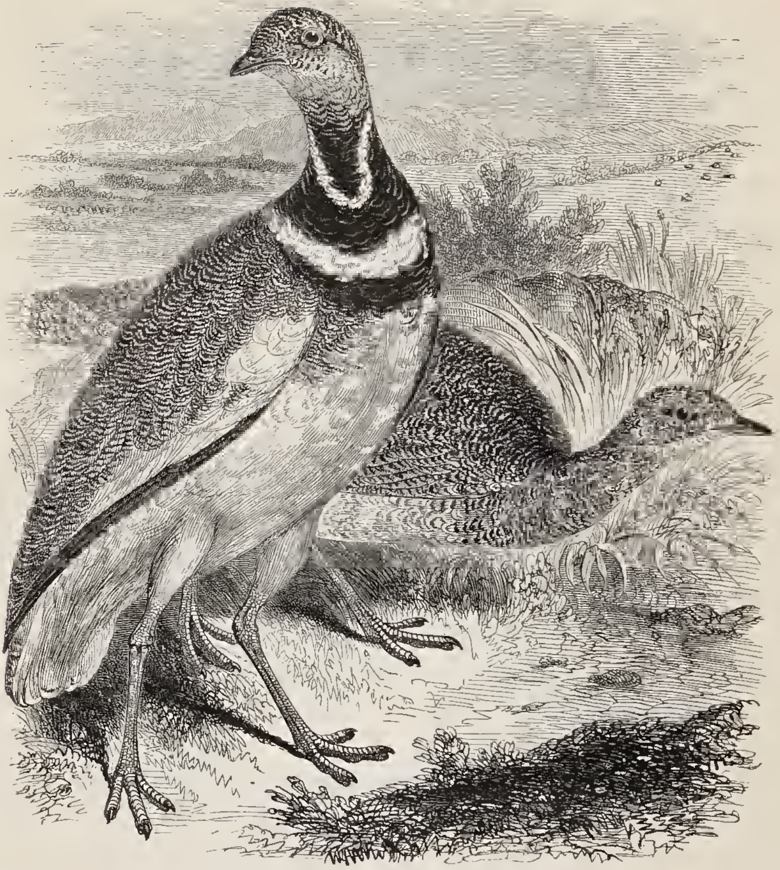
The whole length of the male bird is forty-five inches. From the carpal joint to the end of the wing, twenty-four inches and a half: the first quill-feather shorter than the second; the second shorter than the third or the fourth, which are the longest in the wing.

The whole length of the female is thirty-six inches. From the joint to the end of the wing, nineteen inches and a half. The females generally do not exhibit the lateral plumes from the chin, nor the rufous pectoral band, but in the Transactions of the Linnean Society of Bordeaux, M. de Rochebrune has remarked that when the female has arrived at her full growth, at the age of three or four years, she has the same external characters as the male, only somewhat less developed: a statement not confirmed by other authors.

The young at a month old are covered with a pale buff-coloured down, barred upon the back, wings, and sides with black.

The outline below is drawn, half the natural size, from the breast-bone of a female of the Great Bustard.





Otis tetrax, Linnæus.*

THE LITTLE BUSTARD.

Otis tetrax.

The Little Bustard can only be considered an accidental, and, generally, a winter visitor to this country. The male has never, so far as the Author and the Editor are aware, been killed here in the plumage assumed during the breeding-season; nor have the nest and eggs been found; and most of the specimens, of which many are recorded,

* *Otis Tetrax*, Linnæus, Syst. Nat. Ed. 12, i. p. 264 (1766).

some of them males, have occurred in the winter half-year, —that is, from the middle of autumn to the middle of spring: both sexes, during that period, wearing the same livery.

Bewick mentions two British-killed female specimens: one of them from the vicinity of Newmarket; and Latham cites another, also a female, killed near Romsey, in January, 1809. Pennant records the occurrence of one in Cornwall so long ago as 1751, and since that date about a dozen have been killed in that county.* Six or seven instances might be enumerated of its visits to Devonshire: two of them so recently as December, 1881; and it has occurred with more or less frequency in Hampshire, Sussex, Kent, Essex, Oxfordshire, Cambridgeshire, and Suffolk. As regards Norfolk, owing to the careful manner in which the ornithology of that county has been worked out by Mr. H. Stevenson and others, about a dozen examples are on record: all in winter plumage. There is, however, an example now in the collection of the British Museum to which especial interest attaches owing to its being a male in breeding plumage, and, consequently, an exception to the statement made above; but Mr. Stevenson's investigations shew that there is no evidence to prove that it was killed in Norfolk, or even in Britain (Birds of Norfolk, ii. p. 43). Proceeding northwards, two Little Bustards are found to have visited Lincolnshire; about a dozen have occurred in various parts of Yorkshire; a few in Nottingham and other Midland counties †; three in Northumberland; and, probably, a good many others in counties not specially enumerated here. An unusual number were obtained in the winter of 1874-75. In Scotland four examples have occurred: all on the eastern side of the island; and in Ireland two were seen, and one obtained in 1833, so unusually early in the year as the 23rd August. Altogether, between sixty and seventy have been recorded in the British Islands.

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* In Fox's 'Synopsis' (p. 254), H. Mewburn writes from St. German's, under date of 7th March, 1826, that in July, 1816, he obtained a male, which he sent to Bewick; but nothing is said of its plumage.

† A male and a female, the former in breeding plumage, purchased at the sale of the late Mr. Footit, are now in the collection of Mr. J. Whitaker, of Rainworth Lodge, near Mansfield. It might be assumed that these are the two examples which were shot near Newark-on-Trent; but Mr. Footit left no evidence on the point.

On the Continent the Little Bustard is only a straggler to the Northern, and even to many of the Central, districts, being rare in localities where the Great Bustard is not unfrequent. In France, however, especially in the district between Chalons-sur-Marne and Troyes in the province of Champagne, in the plains of the Nivernais, Berry, and in La Vendée, the Little Bustard has greatly increased in numbers of late years. It arrives there in small flocks about the end of March or beginning of April, at which season it is common on migration over a much larger extent of country, and takes its departure in September. It is abundant in those portions of the Spanish Peninsula where the plains are somewhat broken and undulating in character. In Italy it is principally a migrant, but it is resident in some parts of Sicily and Sardinia, and to a certain extent in Greece. In the southern part of Russia, and on the plains of the Danube, it is still resident, although in decreasing numbers, owing to the spread of cultivation. Eastwards it is found in suitable localities, through Asia Minor and Northern Persia to Afghanistan and Baluchistan, where it is said to breed; and thence, crossing the Pamir range, to the North-western Provinces of India, which it visits with regularity in winter. Beyond the Tian Shan range it has not yet been traced. On the southern side of the Mediterranean it is found in tolerable abundance in Morocco, and in Algeria north of the Sahara, where it is known by the name of "Poule de Carthage"; becoming somewhat rare in Lower Egypt.

The male assumes his breeding plumage in April, at which time he selects a spot, generally about three feet in diameter, near, or upon which, he passes three or four hours each day. He may be seen with his head and neck thrown back, wings somewhat extended and drooping, his tail erect, pouring forth his peculiar cry of *prut, prut,* jumping up at the conclusion of each strain, or call, and striking the ground in a peculiar manner on his descent.* At this season his throat is said to become dilated. The males fight for the possession of the females, but instead of uniting in flocks whilst the latter are incubating, each male is to be found in the vicinity of a hen: that is to say, the birds are in pairs, which looks as if the species was not polygamous.

The nest is on the ground, among herbage which is sufficiently high to hide the bird; the eggs, three to four, and rarely five, in number, are of a very glossy olive-brown, clouded with darker patches, sometimes zoned with rufous, and occasionally of a pale greenish ground-colour; they measure about 1·95 by 1·5 in. The first clutch is laid about the end of May, and a second is frequently produced in the latter part of July.

The food of this species consists of herbs, grain, and insects; in a specimen killed at Harwich, the body of which was examined, the stomach contained parts of leaves of the white turnip, lungwort, dandelion, and a few blades of grass. The flesh had the appearance and flavour of that of a young hen Pheasant. The young eat insects, slugs, and small snails, and even frogs and field-mice with avidity, and the diet of the adult is by no means exclusively vegetable, although necessarily so in the winter season, at which the birds visit this country. The males rise with a loud clatter of wings, but the females sit remarkably close. In the autumn the birds unite and form large flocks, which afterwards break up into smaller parties.

The adult male, when in the plumage peculiar to the breeding-season, has the beak brown; the irides golden-yellow; the top of the head sandy-brown, mottled with black; cheeks, ear-coverts, the front and sides of the neck, bluish-grey, deepening into a border of black passing to the back of the neck; below this a narrow white ring all round the neck, and below this a broad collar and gorget of black, followed by a band of white and another of black at the bottom of the neck in front; shoulders, back, scapulars, tertials, and upper tail-coverts, pale chestnut-brown, streaked irregularly with numerous narrow lines of black; all the wing-coverts, and the base of the primaries, white, the distal half of the primaries greyish-black ; the secondaries patched with black and white ; the base of the tail-feathers white, the ends mottled with black and buffy-white, crossed with two narrow bars of black, the extreme tips white ; the breast, and all the under surface of the body, white ; legs, toes, and claws, clay-brown. The total length is about seventeen inches. From the carpal joint to the end of the wing, nine inches and three-quarters.

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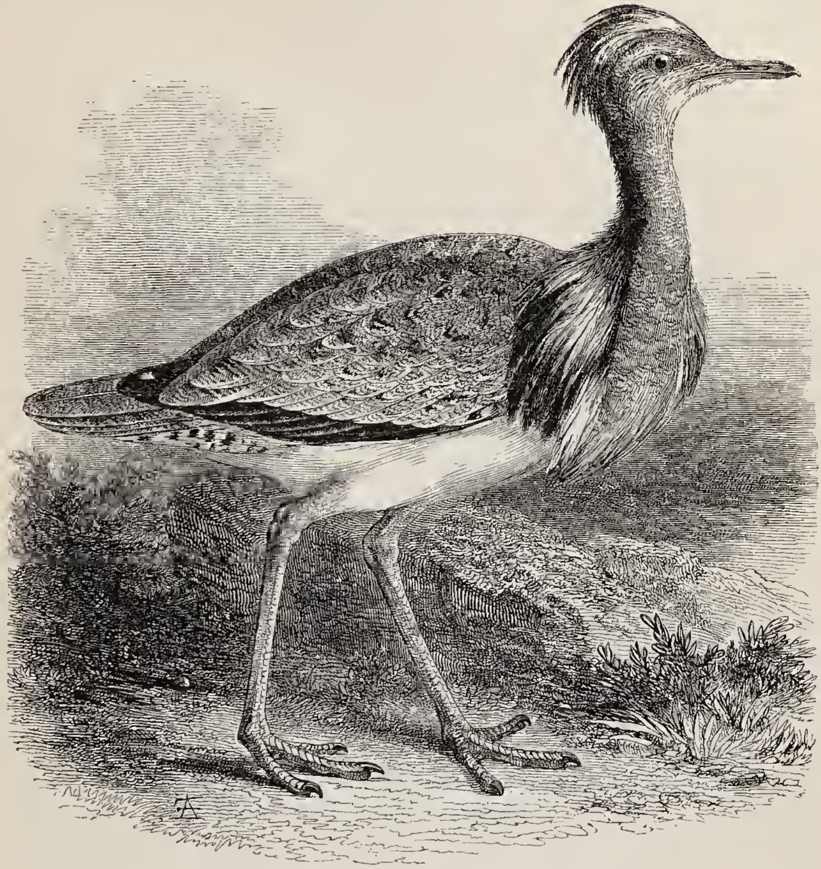
* The latter portion of the French name *Canepetière*, is generally supposed to refer to this peculiar seasonal note.

The males that are killed in the winter half-year have the feathers of the neck of sandy-brown streaked with black, like the same part in the female, which does not change with the season.

The adult female is of the same size as the male, and has the head and neck mottled and streaked with black on a ground of sandy-brown ; the chin white ; the neck below without any appearance of transverse bars at any season ; the wing-coverts have less white than those of the males ; the white feathers on the breast, sides, and flanks are marked with short transverse bars of black. Females in other respects resemble the males. In recently killed examples, the bases of the feathers, excepting those of the head and neck, are frequently suffused with a delicate, and evanescent, rose tint, similar to that which has been mentioned as occurring in the previous species.

A bird in down obtained in the department of Seine-et-Marne has the upper parts fawn-coloured with broad patches of blackish-brown ; from the base of the bill to the auricle a reddish-brown streak, and a white streak from the bill to the eye ; throat and upper part of neck pure white, with rusty yellow markings so disposed as to indicate faintly the outlines of the collar and gorget afterwards borne by the male only ; breast and abdomen dull white.



Otis macqueeni, J. E. Gray.*

MACQUEEN'S BUSTARD.

Otis Macqueeni.

The interest which attaches to this bird is greatly enhanced by its being added to the list of European species, and to the Fauna of our own island; a fine specimen, in the Museum of the Philosophical Society at York, having been shot by Mr. G. Hunsley in a stubble-field on Kirton

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* Illustrations of Indian Zoology, ii. pl. 47 (1833–35).

Cliff, Kirton-in-Lindsey, Lincolnshire, on the 7th of October, 1847 (Zool. pp. 1969, 2065, 2146). This is the only specimen obtained in Great Britain down to the present time.

On the Continent the visits of this Asiatic bird have been more frequent, although there is difficulty in identifying some of the earlier occurrences, owing to this species having been formerly confused with the closely allied African representative *O. undulata*. Modern research, wherever practicable, renders it, however, tolerably certain that the five "Houbara Bustards" recorded as having occurred in Northern Germany between the years 1800 and 1847, were all, or nearly all, examples of *O. macqueeni*. In Belgium three genuine examples of this species have been obtained: viz., one in September, 1842; one near Louvain, in December, 1844; and one near Brussels, on the 13th December, 1845. In February, 1847, one was killed on the Swedish island of Oeland; on the 12th November, 1857, an adult female was shot, out of a flock of six individuals, near Flensburg, in Schleswig; in December, 1860, one was captured alive in the district of Ilza, in Poland; on September 19th, 1861, one was obtained near Helsingfors, in Finland; and recently, one was shot in the latter part of September, 1880, in Livonia (Zool. Garten, 1881, p. 156). In Italy, where the African form might rather have been expected to occur, two females of the Asiatic species were obtained near Rome, in November and December, 1859, and are, respectively, in the Museum at Florence and that of the University of Rome. These examples were referred to *O. undulata* by Dr. Salvadori, who had not seen them, but Professor Giglioli identifies them with the Asiatic bird; and, apparently, the rare occurrences of the African Ruffed Bustard in Europe are limited to Malta and Southern Spain.

Captain Hutton states that Macqueen's Bustard is common, and remains all the year on the stony plains of Afghanistan, where it is sometimes seen in small packs of five or six together. It flies heavily, and for short distances, soon alighting and running. Severtzow obtained it on migration on 17th September in the Pamir range, and it appears to be resident between the Caspian and Yarkand, ranging as far as the Altai range to the north-east, and perhaps to Mongolia, as both Prjevalski and the Abbé David observed a small species of Bustard, which they were unable to procure. Throughout Persia it is common down to the Gulf, on some of the islands of which it is supposed to have bred; and the highlands of Baluchistan are also believed to be its breeding-grounds. In the cold season it straggles as far as the Jumna, but it is only to be found in any numbers in the sandy, semi-desert country of Sind, especially in the Sirsa and Kurachee districts, in the latter of which about fifty have been known to fall to one gun in a single day. It appears in September, and leaves again in March or April.* To the west of Persia it becomes difficult to trace the range of this species, for De Filippi, who brought home no skins, affirms that it is the African form which occurs in Armenia, nor did Canon Tristram bring back specimens of the Ruffed Bustard which he observed in Palestine.

Mr. Hume states that he has never remarked any preponderance of females over males. Macqueen's Bustard frequents the fields which yield the oil-seeds of commerce, and feeds largely on the small fruits of the *Ber*, the berries of the *Grevia*, and the young shoots of the lemon-grass: occasionally picking up a grasshopper or a beetle. The specimen killed in Lincolnshire had its craw filled with caterpillars of the Common Yellow Underwing Moth, small shelled snails, beetles, &c.

An egg of this species obtained by the collector of Herr Tancré, in the Altai range—presumably on the elevated plains—is in the collection of Mr. H. Seebohm, and is figured in his 'History of British Birds, with Coloured Illustrations of their Eggs,' Pt. II. pl. 21. It is of a somewhat olivaceous-brown colour, with darker blotches, and measures 2·6 by 1·85 in.

The male has the forehead, sides of the head, upper part of the back of the neck, pale buff, pencilled with black; crest feathers white at the base, and black for the remainder of their length; nape and base of the neck, whitish; on the sides of the neck, a series of plumes gradually increasing in length, the upper two-thirds of which are black; of the remainder some are white, others black, and some both black and white; upper surface sandy-buff, minutely pencilled with black, the pencillings increasing in breadth and intensity here and there so as to form irregular bars across the feathers, these darker markings becoming larger and more conspicuous as they proceed posteriorly; rump without these darker pencillings; upper tail-coverts and tail similarly marked and crossed by bands of grey, which increase in size towards the tip; the tail is, moreover, washed with rufous, and terminated with buffy-white; wing-coverts buffy-white, pencilled with black; first five primaries white at the base, and black for the remainder of their length; the other primaries and the secondaries black, with a transverse mark of white at the tip; throat white; neck and breast light grey; under surface of the wing and abdomen white; lower part of the flanks and under tail-coverts white, pencilled and barred with blackish-brown; irides yellow; bill blackish-horny, except at the base, which is yellowish; legs greenish-yellow.

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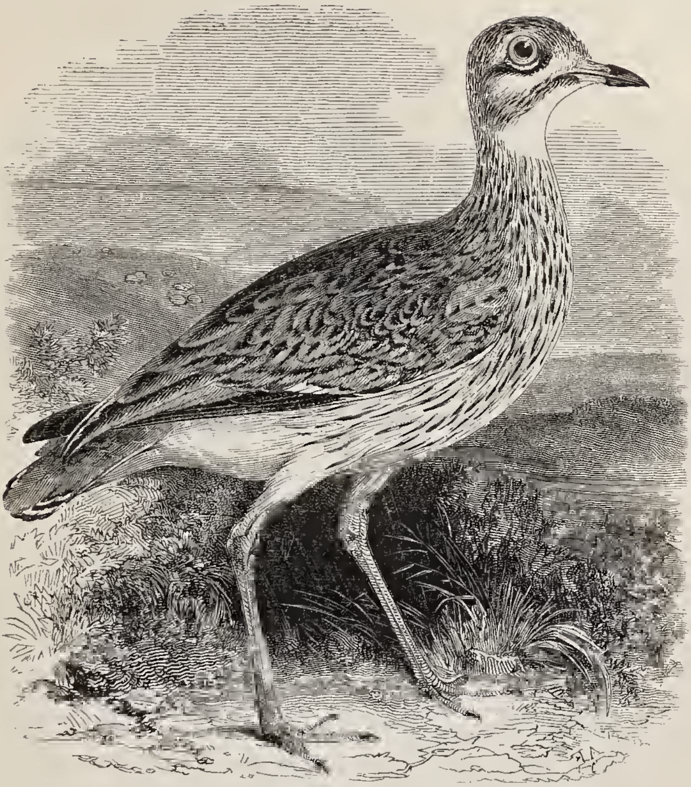
* Hume and Marshall, 'Game Birds of India,' i, pp. 17-21.

The female is a little lighter in colour, and has the crest and ruff less developed than the male. The basal portion of most of the body feathers is suffused with a vinaceous tint, similar to that already noticed in the Great and the Little Bustards. Total length of either sex about twenty-six inches; from the carpal joint to the end of the wing fifteen and a half inches.

The figure here given represents the male bird in his breeding plumage, and is taken, by permission, from Mr. Gould's 'Birds of Asia.'

In the African *O. undulata*, the ground-colour of the upper parts is more rufous, the vermiculations are much coarser, the tail is broadly crossed with five bars of bluish-grey, and the elongated feathers of the crest, and on the lower throat, are white.



ŒDICNEMUS SCOLOPAX (S. G. Gmelin*).

THE STONE-CURLEW,

THICKNEE, OR NORFOLK PLOVER.

Œdicnemus crepitans.

ŒDICNEMUS, *Temminck*†.—Beak stout, strong, and straight, a little depressed at the base; ridge of the upper mandible elevated, under mandible with an angle at the symphisis. Nostrils placed in the middle of the beak, extending

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[*] *Charadrius scolopax*, S. G. Gmelin, Reise Russland, iii. p. 87, pl. xvi. (1774).

[†] Manuel d'ornithologie, p. 322 (1815). The name *Œdicnemus*, from οἶδος a swelling, and κνήμη leg, was first applied by Pierre Belon, 'L'histoire de la nature des oyseaux,' p. 240 (1555). Temminck adopted it as a generic term, adding the specific designation *crepitans*, which is both inappropriate, and considerably antedated by an excellent description and illustration.

longitudinally as far forward as the horny portion, open in front, pervious. Legs long, slender; three toes only, directed forwards, united by a membrane as far as the second articulation. Wings moderate; second quill-feather the longest in the wing. Tail graduated.

THE STONE-CURLEW, THICKNEE, or NORFOLK PLOVER, names referring to qualities or habits in this species, is a summer visitor to this country, arriving here in April, and leaving again at the end of September or in October, and, like other summer visitors, coming to us from the south. It is essentially a lover of dry and uncultivated lands during the breeding-season, and although it occurs as a straggler on migration in a good many counties of England, a glance at a geological map will shew that its general distribution in this country coincides broadly with that of the cretaceous formation, the chalk downs being especially suited to its habits. In Cornwall, according to the late E. H. Rodd, the Stone-Curlew is only a winter visitant, and it would appear that, from the mildness of the climate, that south-western county forms the northern boundary of the winter quarters of the species. The same probably holds good of Devonshire, where Montagu records an occurrence so early as February in the year 1807; and also of Somersetshire, where it is very rare. On entering upon the chalk downs of Dorsetshire it is to be found breeding regularly; also, subject to the hostile influences of enclosure and cultivation, in Wiltshire; Hampshire (visiting the Isle of Wight on passage and in winter); Sussex; Kent, especially on the hills above Romney Marsh; Berkshire, Oxford and Bucks, straggling into Middlesex; Bedfordshire and Hertfordshire, notably on the chalk hills about Tring; and so on, through Cambridgeshire, to Suffolk and Norfolk, where it finds the conditions more congenial than anywhere else in these islands. On either side of these main lines the Stone-Curlew appears to be a straggler; but it is found breeding in small numbers in Rutland and Nottingham, and the late E. Blyth obtained its young in Worcestershire. It is still found on the Wolds of Lincolnshire, and across the Humber it continues to breed, although in decreasing numbers, in a few localities in the

East Riding, but to West Yorkshire it is only a straggler; and in Lancashire, Cheshire, and Wales its occurrence is very rare, if not absolutely unknown. North of Yorkshire a specimen of the Stone-Curlew was obtained in February, 1864, near South Shields; and another, killed on the 27th January, 1858, near St. Andrew's, Fife, is in the Museum of that University. In Ireland only three authenticated occurrences—all of them in winter—are enumerated by Thompson, and since he wrote about as many more have been recorded.

At the present day the headquarters of the Stone-Curlew are upon the open 'brecks' and warrens of Norfolk and Suffolk. The late J. D. Hoy, in a letter to the Author, says, "there is no part of England where the *Œdicnemus crepitans* so abounds as upon the sandy plains of Norfolk; great numbers have been caught in most seasons by the Subscription Heron Hawks at Didlington Hall, Norfolk; they have been known to take refuge in a rabbit burrow when pursued by the Hawk."

The late J. D. Salmon, then of Thetford, says of this species, "that it is very numerously distributed over all our warrens and fallow lands during the breeding-season, which commences about the second week in April, the female depositing its pair of eggs upon the bare ground, without any nest whatever; it is generally supposed that the males take no part in the labour of incubation; this I suspect is not the case: wishing to procure for a friend, a few specimens in their breeding plumage, I employed a boy to take them for me; this he did by ensnaring them on the nest, and the result was that all those he caught during the day proved, upon dissection, to be males. They assemble in flocks previous to their departure, which is usually by the end of October; but should the weather continue open, a few will remain to a much later period; I started one as late as the 9th of December, in the autumn of 1834."

These birds are usually seen in unenclosed countries or where the fields are large, and they frequent sheep-walks, fallow lands, heaths, and warrens. The late Mr. Lubbock mentions their partiality for new plantations made in the open country, on the improved plan of double-trenching the soil. The loosened ground affords better means of obtaining worms and beetles, and the birds appear particularly to delight in the partial concealment which the young trees afford in the first year or two. When the trees attain any size the attraction generally ceases, but Professor Newton states that a pair of birds resorted to a spot in the warren-covert at Elveden, which extends over more than three hundred acres, long after it had become the centre of a flourishing wood.* The eggs, generally two in number, are deposited on the bare ground; they are pale clay-brown, blotched, spotted, and streaked with ash-blue and dark brown; measuring about 2·1 by 1·5 in. So closely do these eggs, and also the chicks in their downy covering, assimilate in colour with the soil and the stones around them, that they are both very difficult to find. Eggs have been observed as late as September.

The large and prominent eye in this species indicates a bird that moves and feeds by twilight or later. Their food is worms, slugs, and insects; they also devour small mammals, and especially field-mice and reptiles. The late Mr. Newcome told Mr. Stevenson that the warreners found frogs which had been disgorged by the Stone-Curlews when caught in traps. Mr. Selby and the Rev. L. Jenyns found the remains of large coleopterous insects, of the genus *Carabus*, in the stomach of this species; and these beetles, it will be recollected, do not begin to move about till the close of day. Its cry is loud and clear, and on moonlight nights especially it is frequent.

Denmark, to which it is a rare straggler, appears to be the northern limit of the Stone-Curlew, but throughout the greater part of the European Continent it is generally distributed where the conditions of existence are favourable, and in the south it is to a great extent a resident throughout the year, on both sides, and in many of the islands of the Mediterranean. In the Canaries also it has been found breeding, and it visits Madeira. Passing eastward, it is found plentifully in Egypt, where Mr. J. H. Gurney, Junr., observed it perching on the roof of an old building at Damietta; and Von Heuglin states that it is resident as far south as Assouan, and the coasts of the Red Sea. In the Somali country our Stone-Curlew is represented by *Œ. affinis*, Rüpp., a form which is very closely related to a widely distributed South African species, *Œ. capensis.* The range of the Palæarctic species may be traced through Asia Minor, Turkestan, Persia, and Sind, in all of which it breeds, down to Ceylon, where it is found in sandy districts throughout the year, and so far deviates from its northern habits as to be found in the cinnamon gardens, as mentioned by Mr. Holdsworth. As a rule eggs laid in these southern countries, on arid soils, are characterized by their pale sandy colour, and in a series they are smaller than northern examples. Burmah appears to be its limit in South-eastern Asia.

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* Stevenson, 'Birds of Norfolk,' ii. p. 55.

Only the present species of Stone-Curlew is known in the Palæarctic region, but there are four other species or representative forms in Africa. In America *Œ. bistriatus* ranges from Southern Mexico to Guiana: a distinct form, *Œ. superciliaris*, occurring in the Peruvian Andes; and in Australia the genus is represented by *Œ. grallarius.*

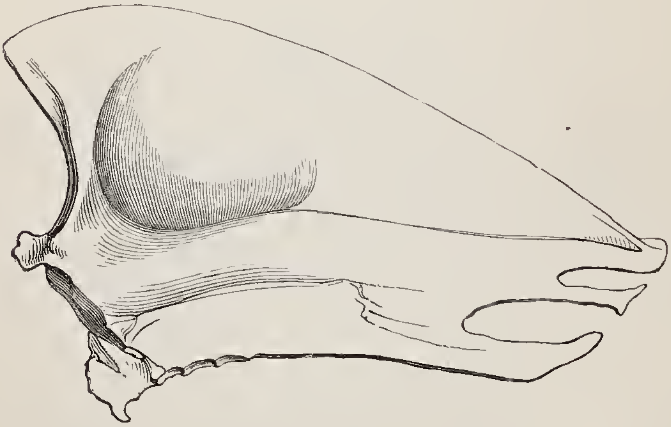
In the adult bird, the beak is black at the point, the base greenish-yellow; the irides golden-yellow; the top of the head and back of the neck pale wood-brown, each feather with a streak of black in the centre; from the base of the upper mandible a light-coloured streak passes backward under the eye to the ear-coverts; from the base of the lower mandible a brown streak passes below the light-coloured one to the ends of the ear-coverts; the feathers of the back, wing-coverts, tertials, and upper tail-coverts, pale brown, each feather with a dark brownish-black longitudinal streak in the line of the shaft; wing-primaries almost black, the first and second with a white patch towards the end; the tail-feathers with the basal halves mottled with two shades of brown, the third portion white, the ends black; the outside tail-feathers shorter than those in the middle. The chin and throat white; the neck and breast pale brownish-white, each feather streaked along the centre with blackish-brown; belly, sides, and flanks almost white, with long narrow longitudinal streaks; vent and under tail-coverts buffy-white, without streaks; legs and toes yellow; the claws almost black.

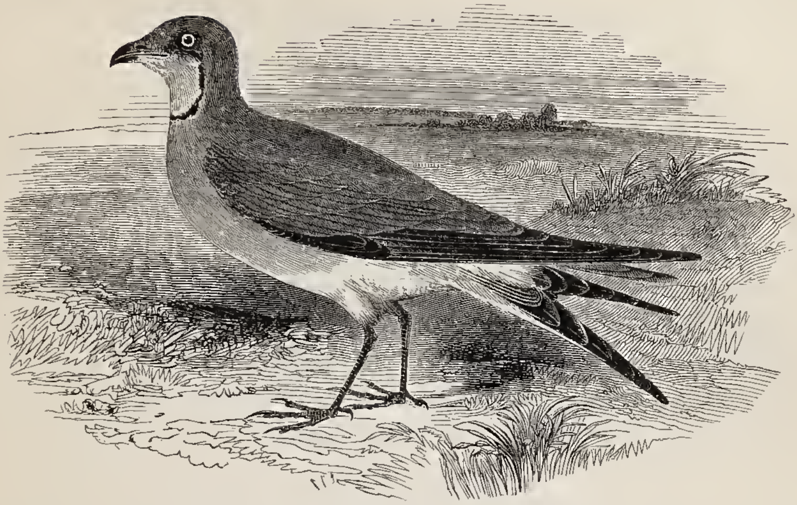
The whole length is seventeen inches. The wing from the carpal joint to the end, nine inches and three-quarters; the first and second quill-feathers nearly equal in length, and the longest in the wing.

The plumage in the two sexes is nearly similar.

In young birds the markings of the plumage are less distinct, and the œdematous swelling at the joints, which has originated the name Thicknee, is then apparent, but afterwards disappears. In the nestling the upper parts are stone-buff with brown lines; a dark stripe down the centre of the crown, and similar stripes from the neck to the rump and along the sides; under parts pale buff; legs bluish-grey.

The breast-bone of this species is here figured.





GLAREOLA PRATINCOLA (Linnæus [*]).

THE COLLARED PRATINCOLE.

Glareola torquata.

GLAREOLA, *Brisson* [†].—Beak short, convex, compressed towards the point, the upper mandible curved throughout the distal half of its length. Nostrils basal, lateral, pierced obliquely. Legs bare for a short space above the tarsal joint; long and rather slender; three toes in front, one behind; the middle toe united by a short membrane to the outer toe; the inner toe free; the hind toe articulated upon the tarsus; claws long and subulate. Wings very long, the first quill-feather the longest.

THE PRATINCOLE is an inhabitant of the temperate and warmer parts of Europe, Africa, and Asia, and occurs in the British Islands as a rare straggler. The earliest record is perhaps by Graves, who says that one was taken at Boldness, in Cumberland, in 1807; one in September, 1811, near Truro, in Cornwall; and one on Eude-waters, in Surrey, prior to 1812.[‡] He gives a coloured illustration, for which he says he is indebted to Mr. J. Bullock, of the London

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[*] *Hirundo Pratincola*, Linnæus, Syst. Nat. Ed. 12, i. p. 345 (1766).

[†] Ornithologie, v. p. 141 (1760).

[‡] British Ornithology, ii., not paged (1813).

Museum, of a specimen which was shot near Ormskirk, in Lancashire: in October, 1809, according to Graves, but respecting this and another example, Bullock himself writes as follows (Trans. Linn. Soc. xi. p. 177):—

"The first instance of this bird having been killed in Britain occurred in 1807, when one was shot in the neighbourhood of Ormskirk, in Lancashire: it was preserved by Mr. J. Sherlock, of that place, from whom I purchased it a few days afterwards.* On the 16th of August last [1812] I killed another specimen of this bird in the Isle of Unst, about three miles from the northern extremity of Britain. When I first discovered it, it rose within a few feet and flew round me in the manner of a Swallow, and then alighted close to the head of a cow that was tethered within ten yards' distance. After examining it a few minutes, I returned to the house of T. Edmondson, Esq., for my gun, and, accompanied by that gentleman's brother, went in search of it. After a short time it came out of some growing corn, and was catching insects at the time I fired; and, being only wounded in the wing, we had an opportunity of examining it alive. In the form of its bill, wings, and tail, as well as its mode of flight, it greatly resembles the genus *Hirundo;* but, contrary to the whole of this family, the legs were long, and bare above the knee, agreeing with *Tringa;* and, like the Sandpipers, it ran with the greatest rapidity when on the ground, or in shallow water, in pursuit of its food, which was wholly of flies, of which its stomach was full. It was a male, and weighed 2 oz. 11 dwt."

The bird killed near Ormskirk was in the collection of the late Earl of Derby. The other remained in Mr. Bullock's possession till the sale of the contents of his museum in 1819; when the Author finds, by a reference to his priced catalogue, that this specimen from Shetland produced £8. 8*s*., and was transferred to the British Museum.

Mr. Joseph Clarke, of Saffron Walden, sent word to the

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* Montagu, apparently alluding to the same specimen, states that it was shot on 18th May, 1804!

Author that a pair of Pratincoles was shot on the Breydon-wall, near Yarmouth, in May, 1827, by John Bessey, a fisherman, and sold to Isaac Harvey, a bird-preserver, who re-sold them for £7. The occurrence and capture of this pair of Pratincoles is mentioned in the Messrs. Pagets' 'Sketch of the Natural History of Yarmouth and its Neighbourhood' (p. 10). In May, 1840, another was shot upon the shore of the harbour of Blakeney, in Norfolk, by Henry Overton, a fowler, and passed into the possession of Mr. John Sparham, by whom it was presented to Mr. Henry Rogers, solicitor, at Thetford, and afterwards became the property of Mr. Newcome, of Feltwell Hall, who subsequently obtained another shot in his neighbourhood during the first week of June, 1868 (Zool. s.s. p. 1492).

From Mr. F. Holme, the Author learned that a Pratincole was shot by Mr. Frederick Oats, of Branston Hall, near Lincoln, on the 15th of August, 1827.

The Rev. Leonard Jenyns sent notice of a Pratincole shot in Wilbraham Fen, Cambridgeshire, on 21st June, 1835, which passed into the collection of Mr. J. T. Martin, of Quy Hall, in that county.

In the middle of November, 1842, a specimen of this rare bird was shot by Mr. Hussey, at Tilshead, in the bleakest part of Salisbury Plain, and is now in the collection of the Rev. A. C. Smith, at Yatesbury Rectory, Calne, Wilts.

In May, 1844, one was shot on Staxton Wold, near Scarborough, in company with a flight or 'trip' of Dotterel, as recorded by the late Sir William Milner, Bart. (Zool. p. 2023); one now in the collection of Mr. J. H. Gurney, Junr., was said to have been shot at Bridlington, in the same county, in February, 1850;* and a third, obtained near Whitby, in October, 1871, is in the Museum of that town.

On the 7th September, 1851, a pair was observed on a sand-bank at the mouth of the river Exe, where their movements on the sand very much resembled those of the Ringed Plover (Zool. p. 3710); and the late Mr. Ross informed Mr. Gatcombe that he once saw two on the Warren Sands, near Exmouth (Rowe's B. of Devon, p. 32). Mr. J. C. Mansell-Pleydell states (B. of Dorset, p. 25) that one which is in the collection of Viscount Portman was shot at Bryanston, on the banks of the Stour, some years ago; and he mentions two others as having been seen in the county.

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* This example was originally assigned to Bedlington, in Northumberland, but this is admitted to be an error: *cf.* Hancock, N. H. Trans. Northumb. and Durham, vi. p. 96, note.

In October, 1864, a maimed or weary bird was knocked over with shingle on the beach of Stokes Bay, near Gosport (Zool. s.s. p. 2944). In June, 1874, the late E. H. Rodd obtained a male Pratincole in the flesh, which had been shot when apparently hawking for insects over a pool on the Lizard downs (Zool. s.s. p. 4077); and Mr. E. C. Phillips states that one was observed some time since by two competent observers near Hay, in Breconshire (Zool. 1882, p. 213). An example is cited by the Rev. M. A. Mathew (Zool. 1881, p. 309) as having been killed on the Mendips, in Somersetshire; and there are probably several unrecorded specimens in existence.

In Ireland a Pratincole is stated to have been shot by the Rev. Joseph Stopford, at Castlefreke, Co. Cork, in the month of October, a few years previous to 1843, but the specimen was not preserved.*

The Pratincole is only a straggler to Denmark, Germany, Belgium, and the northern portion of France, but in the south-eastern districts of the latter country it breeds, especially in the Gard. In Savoy and Switzerland it is only a rare visitant, but along the coast of Italy, where it is known as the *Pernice di mare*, it is a tolerably regular migrant of short stay; and in Sicily it is to a certain extent resident, breeding abundantly in the southern districts. In the Spanish Peninsula it is very numerous in suitable localities, such as are afforded by the great plains or *marisma* along the Guadalquivir, where it breeds in hundreds. It also breeds in the Balearic Islands, but in Sardinia it appears to be a somewhat irregular visitant, and in Malta

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* J. R. Harvey, 'Fauna of Cork,' p. 11 (1843).

Mr. C. A. Wright found it only as a migrant. In Greece and the neighbouring islands it is most numerous in winter, and on passage, but Mr. H. Seebohm found it breeding on the islands of the Lagoons of Missolonghi. He also found it breeding near Smyrna, as Canon Tristram did in Palestine; but along the eastern side of the Black Sea, in Turkey, and Southern Russia, and up to 56° N. lat. in the latter, this species appears to be replaced by a closely allied form, *Glareola melanoptera*, which is rather darker, and has the under wing-coverts and axillaries black, instead of chestnut-red. Both were obtained by Dr. Finsch at Ala-Kul, in South-western Siberia; but in Turkestan Severtzoff found *G. pratincola* and a form intermediate between it and *G. melanoptera*, which he identifies with *G. limbata*, Brehm.

In Morocco the Pratincole is now well known as a common species, but when the former Editions of this work were published, great store was set upon two skins and an egg of what was, then, an exceedingly rare bird, obtained by Colonel Drummond-Hay near Tangiers, and presented to the Zoological Society. In Algeria it breeds in abundance, and it is numerous in Egypt, from whence it can be traced to Abyssinia, and as far as Natal on the one side; and Damara-land on the west; but the common form in winter in South Africa appears to be *G. melanoptera*. In Persia Mr. W. T. Blanford obtained our species, which breeds in Sind, and also occurs sparingly in the northern parts of India, but throughout the central and southern districts of that country, South-eastern Asia, and Malaysia, down to Australia, the prevailing and representative form is *G. orientalis*, which is smaller, has a less forked tail, and lacks the white tips to the secondaries. The latter race was the only one found by the Abbé David in Mongolia, and, according to Taczanowski, by Radde on the Argun. The family *Glareolidæ* is restricted to the Old World.

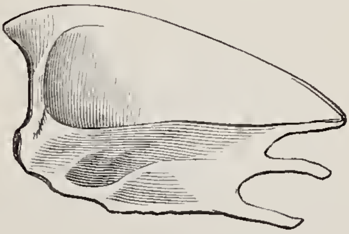
Before having had an opportunity of examining a specimen, Linnæus had classed the Pratincole with the Swallows in the genus *Hirundo;* but when he had received one sent by the Rev. John White from Gibraltar, he writes from Upsala, under date of 3rd July, 1774:—"Pratincolam antea non vidi; ad *Grallas* spectat, et proprii generis est." Sundevall placed it among the *Caprimulgidæ*, but no other recent systematist of any note has removed it from the Plovers, to which it has strong affinities. In its flight it is also very Tern-like, especially when hovering with extended wings; but when on the ground it runs with a great rapidity. The note when the breeding-grounds are invaded is a shrill *kia, kia, kiaia,* and the birds are very fearless, swooping close to the intruder's head: then, after settling on the ground for a time, they recommence their evolutions; but they have also a way of cowering over the ground with extended wings which by no means indicates the proximity of eggs or young. The eggs, which in Spain may be found from the beginning of May, although later in some other localities, are frequently only two, but sometimes three in number, and are deposited with their axes parallel upon the dry mud. The shell is thin; the form very oval; the ground-colour of a buff or grey, mottled with spots of dark brown, sometimes in the form of an irregular zone, and measuring about 1·15 by ·9 in. In one instance Mr. Seebohm found a clutch of four eggs, but the case is quite exceptional; and the fourth egg was probably the produce of another female. The young, specimens of which were obtained by Lord Lilford, and figured in Gould's 'Birds of Great Britain,' run as soon as they leave the egg; they are white on the under parts, and clove-brown, with slight mottlings, on the upper. The food of this species is generally obtained on the wing, although sometimes on the ground, and consists of insects: especially beetles, grasshoppers, and locusts.

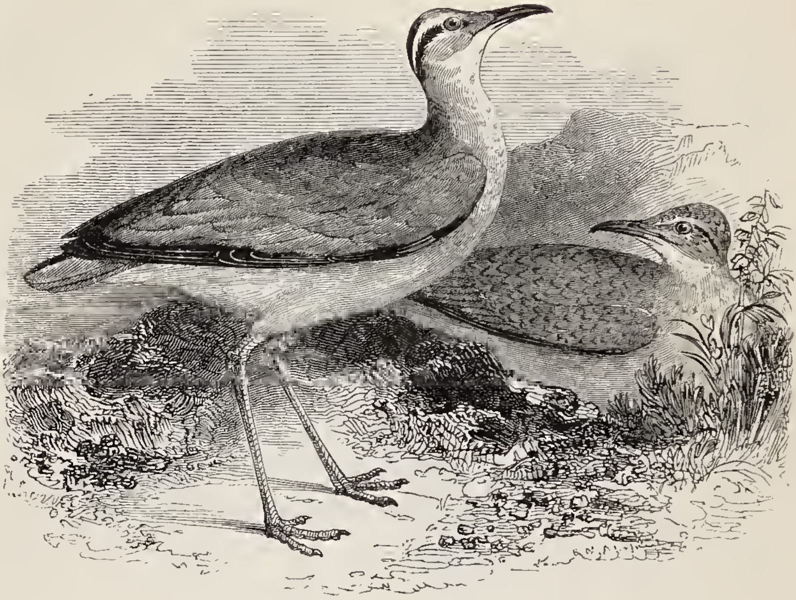
The beak is curved, and almost black, and, in the living bird, the edges of both mandibles, and the base of the lower one, are bright scarlet-orange; the irides light brown; the head, hind-neck, back, scapulars, wing-coverts, and tertials, nearly uniform clove-brown; primaries nearly black; upper tail-coverts white; tail very much forked, the feathers white at the base, the other part dark brownish-black: the outer feather on each side as long again as those in the middle; the chin white; the throat pale buff, with a crescentic line of black ascending to each eye; breast brownish-buff; belly, thighs, and under tail-coverts, buffish-white; axillaries and under wing-coverts ruddy chestnut; the legs reddish purple-brown.

In the young bird the clove-brown feathers of the back, and the wing-coverts, secondaries and tertials, have pale rufous margins; the tail-feathers are shorter, and much less forked; throat pale brown, the crescentic collar indicated by dark brown spots; breast varied with two shades of brown; belly, and under surface of the body, and tail-feathers, greyish-white.

Females resemble the males. The whole length of an adult bird is ten and a half inches. From the carpal joint to the end of the first quill-feather, seven and a half inches.

The outline below represents the breast-bone of the Pratincole, and, in the double emargination on each side of the keel, it will be found to resemble the breast-bones of the Bustards and Plovers.





Cursorius gallicus (Gmelin*).

THE CREAM-COLOURED COURSER.

Cursorius Europæus.

Cursorius, *Latham*†.—Beak a trifle shorter than the head, straight to the end of the nasal sinus, then decurved to the tip, which is pointed. Nostrils oval. Tarsi long and slender ; toes, three only, all in front, middle toe almost as long again as the lateral toes. Wings long, rather pointed ; the first and second quill-feathers the longest in the wing.

The Cream-coloured Courser was first described by Buffon from a specimen killed in France, and to this circumstance it owes its specific name ; but neither to France, nor indeed to any of the countries north of the Mediterranean, can the bird be considered as otherwise than an irregular visitant, although it is naturally more frequent in Southern than in Northern Europe.

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[*] *Charadrius gallicus*, Gmelin, Syst. Nat. i. p. 692 (1788).

[†] Ind. Orn. ii. p. 751 (1790).

The earliest occurrence on record of the Cream-coloured Courser in England appears to be that of the specimen shot in 1785 by William Hammond, Esq., of St. Alban's Court, near Wingham, in East Kent, who presented the specimen to Latham, with the following account:—"He first met with it, running upon some light land; and so little fearful was it, that after he had sent for a gun, one was brought to him, which having been charged some time, did not readily go off, and in consequence he missed his aim. The report frightened the bird away; but after making a turn or two, it again settled within a hundred yards of him, when he was prepared with a second shot, which despatched it. It was observed to run with incredible swiftness, and, at intervals, to pick up something from the ground; and was so bold as to render it difficult to make it rise from the ground, in order to take a more secure aim on the wing. The note was not like that of any kind of Plover, nor, indeed, to be compared with that of any known bird."* (Synop. Birds, Supp. I. p. 254, pl. cxvi.) This example, which the plate shews to be an immature bird, passed into the Leverian Museum, and having subsequently been purchased by Donovan for eighty-three guineas, it found its way to the British Museum.

The next instance is that of the bird mentioned by Montagu (Supp. Orn. Dict.) as having been shot in North Wales in 1793, by Mr. George Kingston of Queen's College, Oxford, and preserved in the collection of the late Professor Sibthorp of that city. A third specimen, recorded in Atkinson's 'Compendium of British Ornithology,' was shot on some dry fallow ground near Wetherby, in Yorkshire, in April, 1816; a fourth is said by Gould (B. of Gt. Britain) to have been killed in the same county in 1825 by one of Lord Harewood's keepers; and a fifth is stated to have been obtained at Holme, near Market Weighton, in the

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* The date is not mentioned, but from the tenor of Latham's letter, dated 12th December, 1785, acknowledging the gift (communicated to Mr. Gould by Mr. W. O. Hammond, the grandson of the donor), it would appear that the bird was killed a short time previously.

East Riding, in 1828 (W. E. Clarke, Hbk. Yorkshire Vertebrates, p. 70).

A sixth example, recorded by Mr. George T. Fox, of Durham (Zoological Journal, iii. p. 492), was shot on the 15th of October, 1827, under Timberwood Hill, in Charnwood Forest, Leicestershire, by a tenant of Mr. T. Gisborne, of Charley Mill, near that place, and became the property of the Rev. T. Gisborne, of Yoxall Lodge, Staffordshire, to whose ornithological taste his son knew the possession of it would be a subject of congratulation. He liberally furnished the use of it to Mr. Selby and Mr. Bewick, for the purpose of engraving figures of it for their works on British Ornithology, and the representation of this Cream-coloured Courser was the last bird engraved by the latter.*

Another example is recorded by Mr. E. Acton (Mag. Nat. Hist. iv. p. 163) as shot at Friston, near Aldborough, in Suffolk, on the 3rd of October, 1828, and this specimen is believed by Dr. Bree to be the one preserved in the late Mr. J. D. Hoy's collection at Boyle's Court, near Brentwood, as it is labelled "killed in 1828." Mr. Cordeaux informs the Editor that the collection of the late Rev. J. Mossop, of Covenham, contained one which had been captured in an exhausted state near Marsh Chapel, on the coast of Lincolnshire, about 1840. In the 'Proceedings of the Berwickshire Naturalists' Club for 1847,' it is recorded that a young male was shot near Cheswick, in Northumberland, on the 9th November, 1846, during a strong gale from the south, being chased by Gulls, and this is preserved in Mr. Brodrick's collection. The evidence of competent observers led Mr. Stevenson (B. of Norfolk, ii. p. 49) to believe that an example of the Cream-coloured Courser was seen near Blakeney in the autumn of 1847, and another near Westacre, at the same season, in the year 1855 or 1856.

An adult specimen of this bird was shot by Mr. Walter Langton, on East Down, Salisbury Plain, on the 2nd of October, 1855. Mr. Langton was following a wild covey of Partridges which had settled on the open downs, when his pointers stood at this bird; it got up, flew about a hundred yards, and pitched again; he kept it in sight, and shot it on the ground. The bird was sent for preservation to the late Mr. Gardner, of Oxford Street, who gave the Author the body, when skinned, for examination. It was a male, the stomach membranaceous, the contents a dozen skins of caterpillars, apparently of the Garden White Butterfly, one wireworm, one small-shelled snail, *Helix ericitorum,* and many fragments of the hard portions of small beetles. Its breast-bone is now figured.

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* A coloured figure of this specimen is given in the Appendix to Potter's History of Charnwood Forest (1842).

Mr. J. C. Mansell-Pleydell states (B. of Dorset, p. 25) that, "in the year 1853, the present Lord Digby, while following the hounds, observed, with the practised eye of a sportsman, a strange bird on Batcombe Hill. The late Earl of Ilchester next day sent his keeper Walton (still living) in search of it, who killed it. The bird proved to be the Cream-coloured Courser, and is in the possession of the present Earl."

In October, 1856, two were seen on Braunton Burrows in North Devon, and one was shot (Zool. p. 5346); and two are recorded by Mr. Gervase F. Mathew as having been seen in the same place in March, 1860 (Zool. p. 6980). In 1858, on the 19th October, a female was obtained in Hackney Marshes, Middlesex (Zool. p. 6309). Mr. F. S. Mitchell, of Clitheroe, writes to the Editor that he has examined a Courser which was shot in the autumn of 1860, among a flock of Peewits, near St. Michaels-in-Wyse, Lancashire. In October, 1864, an example, recorded and acquired by the late Mr. Allis, of York, was killed at Allonby, near Maryport, in Cumberland (Zool. p. 9418); and early in the same month of the year 1866 one appears to have been shot near Sandwich in Kent (Zool. s.s. p. 523).* On the 8th October, 1868, a male was shot by Mr. Charles

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* With reference to that county, it may be mentioned that Mr. J. E. Harting has furnished the Editor with the following note: "October 20th, 1868. Saw to-day a specimen from the sale of the Margate Museum, said to have been obtained at Westbrook, near Margate, November 1849."

Walker near Lanark (Zool. s.s. p. 1459), the only occurrence as yet recorded in Scotland: and was dissected by Mr. J. H. Gurney, Junr., who contributed the following notes: "In the throat was a small fly undigested; the tongue is narrow, with the appearance of bristles at its base, acute, and seven-eighths of an inch in length; the œsophagus three and a half inches long, its width inconsiderable, the proventriculus three-quarters of an inch long. The stomach is of the ordinary shape, compressed, an inch long, and seven-eighths in breadth; inner coat full of wrinkles. The intestine only fourteen inches long; it varies in width. The cæca, which arise at a short distance from the end, are about two-and-a-quarter inches in length. The sternum closely resembles that of a redshank."* Mr. Gurney also mentions, but without any particulars of capture, a specimen of the Cream-coloured Courser obtained by Mr. Hart, the well-known bird-stuffer of Christchurch, Hants, in the vicinity (Zool. s.s. p. 1512).

In the first week of November, 1870, an eighteenth example was killed on the sea-shore at Goswick, opposite Holy Island, Northumberland (Zool. s.s. pp. 2522, 2562), and is now in the Berwick Museum; and with it, the list of visitants closes for the present. It will be observed that, with one exception, all the occurrences where the date is known, have been in the autumn, and in one case it is on record that the wind was southerly.

On the Continent the Cream-coloured Courser has once straggled to Holland, and on three or four occasions to Northern and Central Germany. To the north of France it is also an irregular visitant, nor is its appearance at all frequent in the southern provinces, where the conditions of soil and climate might appear to invite its presence. In Spain the Editor only knows of a few occurrences; and to Italy its visits are very irregular, although less so in Sicily; and the same may be said of Malta, where Mr. C. A. Wright has examined specimens shot in March, April, and May. To the southern districts of Russia it is also a straggler.

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* In R. Gray's 'B. West of Scotland,' p. 250.

The true home of the Cream-coloured Courser commences at the Canary Islands in the west, where Dr. C. Bolle found it tolerably common, and, upon the arid plains, even numerous. In Morocco, according to the late M. Favier of Tangier, whose interesting notes are published by Col. Irby,* individuals appear annually during July on some plains not far from Tangier: the duration of their stay and their numbers varying with the abundance of insect food and with the temperature, and they leave in August or September. They doubtless retire to a warmer climate, for Canon Tristram only once saw them during the winters of 1856-57 in the Algerian Sahara, as far south as 30°—31° N. lat.; but in the summer of 1856, and towards the end of June, 1857, they were observed in small flocks on the elevated table-lands about Biskra, Batna, Constantine, and Laghouat. In Egypt this species does not appear to be common: at least not in winter; Von Heuglin found it resident in Arabia Petrea, the coasts of the Red Sea, and Kordofan; Mr. Blanford obtained it in Persia and in Baluchistan; and thence it occurs through Sind and the north and western districts of the Punjab, where Mr. Hume found it breeding.

The egg of the Cream-coloured Courser was figured by the late W. C. Hewitson (Ibis, 1859, pl. ii. fig. 3) from a specimen brought from Algeria by Canon Tristram, who contributed notes to the effect that it was taken, with two others, by the keeper of the caravansary of Ain Oosera in the Western Sahara, who said that the eggs were deposited in the bare soil in the most arid plains, and that the complement usually consisted of three. Viera, however, told Bolle that in the Canaries only two were deposited; Favier believed that two was the usual number; and in India neither Mr. Hume nor his collectors appear to have found more in the same clutch. North African eggs are generally of a broad oval shape, of a stone-buff ground colour, marbled with purplish-grey under-shell markings and brown surface blotches: the one figured by Hewitson measures 1·3 by 1·08 in. Mr. Hume, who has obtained a large series in the Sirsa district of the Punjab, states that his are rather smaller and darker in appearance; the bulk of them were obtained in July, but the laying season varies, according to the rains, from March to August.* Most of the eggs of the Cream-coloured Courser in European collections are the produce of a bird brought to Favier in August, 1851, and then in immature plumage. In 1853, after exhibiting much sexual passion, and making a noise resembling '*rererer*,' the bird laid eight eggs—the first on the 15th, the second on the 16th, the third on the 30th May; the fourth on the 1st, the fifth on the 11th, the sixth on the 14th, the seventh on the 23rd, and the eighth on the 25th of June. In 1854 she laid again, with the same irregularity, twelve eggs—the first on the 17th of May, the last on the 28th of July. Though in perfect health, treated and fed in the same way, she did not lay in 1855, but in 1856 laid two eggs on the 6th and 7th of July. In 1857 she again, at irregular intervals, laid ten more eggs—the first in May, the last in July. In 1858 none were laid. In 1859 she produced four more eggs—the first two on the 6th and 7th of July, the others on the 9th and 10th of August.

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* Orn. Str. Gibraltar, pp. 155–158.

As regards the habits of this species, Favier says:—"Their food is entirely insects or larvæ, particularly *Pentatoma torquata*, and different sorts of grasshoppers. They are met with in small lots, usually frequenting dry arid plains, where they spread out in all directions, running about after insects, and are very wary and difficult to get a shot at. Their cry of alarm is much like that of the Plover. They rest and sleep in a sitting position, with their legs doubled up under them. Should they not fly away when approached, they run off with astonishing swiftness, manœuvring to get out of sight behind stones or clods of earth; then, kneeling down and stretching the body and head flat on the ground, they endeavour to make themselves invisible, though all the time their eyes are fixed on the object which disturbs them, and they keep on the alert ready to rush off again if one continues to approach them."

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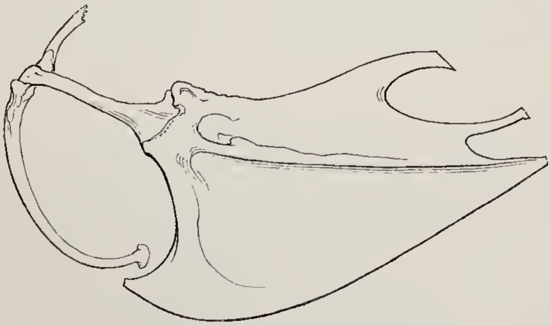
* 'Nests and Eggs of Indian Birds,' pp. 565–567.

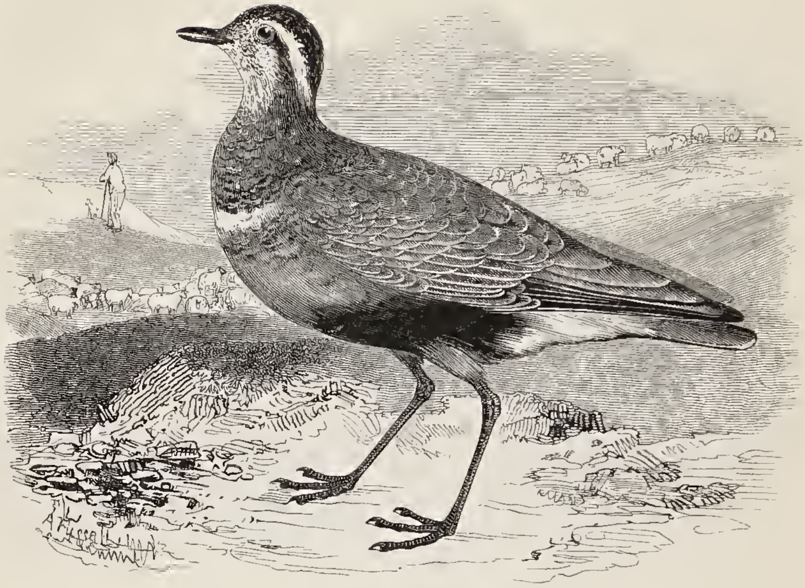
The beak is nearly black at the point, brown at the base; the irides hazel; the top of the head buff-colour, the hinder part grey tipped with black; above the eye, and passing from thence over the ear-coverts to the nape of the neck, is a white streak; below this, from the eye, a black streak, both meeting behind: the neck, back, and all the upper surface of the body and wings, pale wood-brown, tinged with reddish-buff; wing-primaries black; the tail-feathers have an angular black spot near the end, increasing in size toward the feather on each outside, in which the spot is the largest. The chin white; the front of the neck, the breast, and under surface of the body, buffy-white, palest on the vent and under tail-coverts; legs and toes cream colour; the claws brown.

The whole length is ten inches and one-quarter. From the carpal joint to the end of the wing, six inches: the form of the wing pointed, the first and second quill-feathers being nearly of equal length, and the longest in the wing; length of tarsus two inches.

The sexes in plumage resemble each other; but, as usual in such cases, the young birds of the year differ. These have the feathers clouded with two shades of pale brown, with dark, irregular transverse lines of dusky ash-colour, as shewn in the representation; the lines round the back of the head as yet not very conspicuous; the dark feathers of the wing edged on the inner web with buff colour. At the end of the second year they assume the plumage of the adult.



LIMICOLÆ. *CHARADRIIDÆ.*



EUDROMIAS MORINELLUS (Linnæus[*]).

THE DOTTEREL.

Charadrius morinellus.

EUDROMIAS, *C. L. Brehm*[†].—Bill rather slender, compressed, shorter than the head; nasal furrow extending about half the length of the upper mandible, which is horny and slightly decurved to the tip. Nostrils subbasal, lateral, linear. Legs of moderate length, scutellate, rather slender, naked for a short distance above the tarsal joint. Toes three only, all directed forwards: the outer and the middle connected at the base by a slight web; claws short, curved, slender. Tail rather long, slightly rounded. Wings of moderate length, pointed; the first quill-feather the longest; the inner secondaries very nearly as long as the primaries.

THE DOTTEREL is only a summer visitor to this country, making its appearance in the south-eastern counties of England towards the end of April, and does not seem to go in any numbers far to the westward. It seldom makes its appearance in Cornwall and Devonshire, and but little oftener in Dorsetshire. In Wiltshire, Berkshire, Sussex, Hertfordshire, Cambridgeshire, Suffolk, and Norfolk, small flocks, or "trips" as they are called, of Dotterel are seen in the spring on their way to their breeding-ground, which, in many instances, is very far north, and those or others are again seen in the autumn on their return, their numbers then reinforced by the addition of the young birds of the year. On the chalk hills about Royston on the borders of Hertfordshire and Cambridgeshire, these birds have been observed for many years to make their appearance during the last week of April and the first week in May; they are seen for about ten days, some probably moving on to the northward, and their places being supplied for a time by other arrivals from the south; but during the past fifty years there has been a gradual and marked diminution in their numbers in the above locality, partly owing to enclosure. They are found generally on the fallows, or newly-ploughed lands near the edges of the downs, or sheep-walks, where they appear to feed on worms, slugs, insects, and their larvæ. From these counties the birds pass on to more northern localities, and are seen in Suffolk, Norfolk, Lincolnshire, Derbyshire, Yorkshire, Lancashire, Westmoreland, Cumberland, Northumberland, and various parts of Scotland, always inhabiting high ground. In the neighbourhood of the English lakes it is believed that a few pairs still nest, although in numbers sadly diminished since the late T. C. Heysham contributed the following, and now classic, account of the habits of this species at its breeding-ground*:—

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[*] *Charadrius Morinellus*, Linnæus, Syst. Nat. Ed. 12, i. p. 254 (1766).

[†] Handb. Naturg. Vög. Deutschlands, p. 544 (1831).

"I will now narrate," says this gentleman, "as succinctly as possible, what has fallen under my own observation relative to the habits and economy of this bird.

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* The principal causes of the decrease of the Dotterel in the Lake district have been the demand for its feathers for artificial flies by the local anglers, and the temptation offered to the miners by the presence in their immediate vicinity of a bird so good to eat, or so certain to fetch its price from the fly-dresser. The greed of the ornithologist or of the egg-collector, so often stigmatized, has, in this case, exercised no appreciable effect upon its numbers.

In the neighbourhood of Carlisle, Dottrels seldom make their appearance before the middle of May, about which time they are occasionally seen in different localities, in flocks which vary in number from five to fifteen, and almost invariably resort to heaths, barren pastures, fallow grounds, &c., in open and exposed situations, where they continue, if unmolested, from ten days to a fortnight, and then retire to the mountains in the vicinity of the lakes to breed. The most favourite breeding-haunts of these birds are always near to or on the summits of the highest mountains, particularly those that are densely covered with the woolly fringe-moss, *Trichostomum lanuginosum*, Hedw., which, indeed, grows more or less profusely on nearly all the most elevated parts of this alpine district.* In these lonely places they constantly reside the whole of the breeding-season, a considerable part of the time enveloped in clouds, and almost daily drenched with rain and wetting mists, so extremely prevalent in these dreary regions: and there can be little doubt that it is owing to this peculiar feature in their economy, that they have remained so long in obscurity during the period of incubation. The Dottrel is by no means a solitary bird at this time, as a few pairs usually associate together, and live, to all appearance, in the greatest harmony. These birds do not make any nest, but deposit their eggs, which seldom exceed three in number, in a small cavity on dry ground covered with vegetation, and generally near a moderate-sized stone, or fragment of rock. In early seasons old females will occasionally begin to lay their eggs about the 26th of May; but the greater part seldom commence before the first or second week in June. It would appear, however, from the following facts, that they vary exceedingly in this respect. On the 19th July, 1833, a perfect egg was taken out of a female, which had been recently killed on Robinson; and on the 26th of May, 1834, I received four Dottrels from Keswick, which had been shot on Great Gavel [Gable] the day before. In the ovary of one of them I found an egg almost ready for exclusion, being a difference of nearly eight weeks. So great a discrepancy in all probability is of very rare occurrence; yet it will subsequently appear that eggs recently laid, and a young bird, a few days old, were found on the same day, at no great distance from each other. The males assist the females in the incubation of their eggs. How long incubation continues I have not yet been able to ascertain; but I am inclined to think that it rarely lasts much longer than eighteen or twenty days. A week or two previous to their departure, they congregate in flocks, and continue together until they finally leave this country, which takes place sometimes during the latter part of August, at others not before the beginning of September. A few birds no doubt are occasionally seen after this period; but they are either late broods, or birds that are returning from more northern latitudes. This autumn I visited several breeding-stations on the 25th of August, and again on the 2nd of September, but in neither instance could I observe a single individual.

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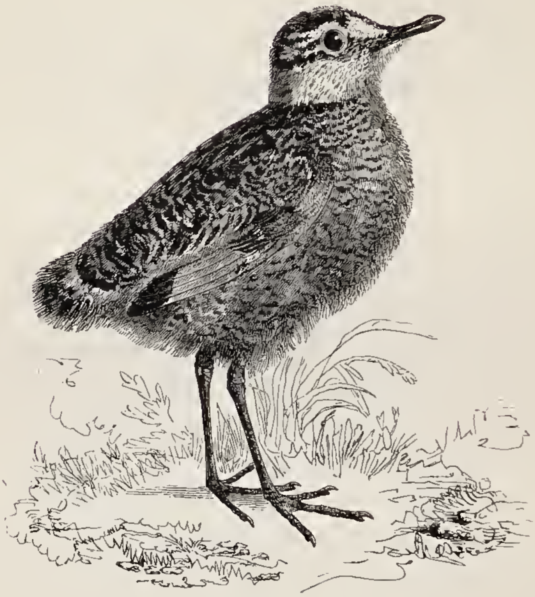
* "The favourite breeding-stations of the Dottrel are frequently called 'smittle places,' by some of the guides and anglers at Keswick." [The Editor is informed by Mr. F. Nicholson, who has been in the habit of exploring these mountains for the last thirty years, and has found a good many Dotterels' eggs, that 'smittle' is merely a Cumberland word meaning 'likely' or 'well adapted.']

"Anxious as I have been for several years past to procure the eggs of the Dottrel for the purpose of adding undoubted specimens of so rare an egg to my cabinet, as well as to prove beyond all doubt that this bird breeds in Cumberland; yet it was not until the present year that I had the gratification of accomplishing an object which I have had so long in view. After repeated excursions through the lake district this summer for the express purpose, I was so fortunate as to obtain their eggs in two different localities,—namely, three on Whiteside, contiguous to Helvellyn, on the 29th of June, and two on the 5th of July on Robinson, in the vicinity of Buttermere. The former had been incubated twelve or fourteen days; the latter were only recently laid; and, in both instances, the birds were seen to leave their eggs: one, on quitting them, immediately spread out its wings and tail, which it trailed on the ground a short distance, and then went away without uttering a single note. On this day, 5th of July, 1835, a young bird, a few days old, was also captured.



"Having spent a considerable portion of several days on Robinson, in company with a very able assistant, searching for the eggs of the Dottrel, I had, of course, ample opportunities of observing their manners; and I flatter myself that the following particulars will be interesting to some of my ornithological readers. On the 3rd of July we found three or four pair near the most elevated part of this mountain; and on all our visits thither, whether early in the morning or late in the afternoon, the greater part were always seen near the same place, sitting on the ground. When first discovered, they permitted us to approach within a short distance, without showing any symptoms of alarm; and frequently afterwards, when within a few paces, watching their movements, some would move slowly about and pick up an insect, others would remain motionless, now and then stretching out their wings, and a few would occasionally toy with each other, at the same time uttering a few low notes, which had some resemblance to those of the Common Linnet. In short, they appeared to be so very indifferent with regard to our presence, that at last my assistant could not avoid exclaiming, 'What stupid birds these are!' The female that had young, nevertheless, evinced considerable anxiety for their safety, whenever we came near the place where they were concealed, and as long as we remained in the vicinity constantly flew to and fro above us, uttering her note of alarm.

"As soon as the young birds were fully feathered, two were killed for the purpose of examining their plumage in this state; and we found that after they had been fired at once or twice, they became more wary, and eventually we had some little difficulty in approaching sufficiently near to effect our purpose. The moult appears to commence somewhat early in old birds; a male that was killed on the 25th of July was completely covered with pen-feathers, and the belly, from incubation, almost entirely bare. The stomachs I dissected were all filled with the *elytra*, and remains of small coleopterous insects, which, in all probability, constitute their principal food during the breeding season.*

"These birds, I understand, are getting every year more and more scarce in the neighbourhood of the lakes; and from the number that are annually killed by the anglers at Keswick and the vicinity,—their feathers having long been held in high estimation for dressing artificial flies,—it is extremely probable that in a few years they will become so exceedingly rare, that specimens will be procured with considerable difficulty."—(Charlesworth's Mag. Nat. Hist., ii. pp. 300–303.)

The maximum number of eggs appears to be three: at least four must be of rare occurrence, and in records furnished to the Editor extending from 1849 to 1874 the former number has never been exceeded. Mr. Nicholson informs the Editor that whenever he has been told of a clutch of four Dotterel's eggs, they have invariably proved to be those of the Golden Plover. The nest is a mere shallow hollow, pressed down, not scraped, and the eggs are placed points inwards. They are of a yellowish-olive colour, blotched and spotted with brownish-black, and measure about 1·6 by 1·1 in.

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* In the stomach of a bird shot in Lincolnshire on 5th May, Mr. Harting found remains of coleoptera, four wireworms, wings of diptera, larvæ of lepidoptera (*Polyodon*), and small particles of grit; and another killed on 7th May, in Cambridgeshire, contained sixty-three wireworms and two beetles.

In the time of Montagu, it appears possible that the Dotterel may have bred on the Mendip Hills in Somersetshire; but there is no evidence that it does so at the present day, although young birds are frequently shot there in September. In Wales it is of very rare occurrence at any season, and it is uncommon in Shropshire, and, in fact, anywhere to the west of the Pennine range of hills. In the Eastern Counties, Dotterels occur on both spring and autumn migrations; but in Lincolnshire, Mr. J. Cordeaux informs the Editor that they are rare there on the return southwards. In spring they still pass with tolerable regularity, although in far smaller numbers than formerly; and they are remarkable for their steady predilection for certain restricted areas: even visiting the same fields year after year. On their first arrival in the last week of April they frequent the wolds for a few days, after which they descend to the marshes on the Lincoln and Yorkshire coasts, and remain there till about the end of the third week in May, when they leave for their breeding-grounds. In Lancashire, Westmoreland, and Cumberland, the Editor is informed that they make their earliest appearance on the sea-coast marshes, and thence proceed to the higher grounds. It is believed that a few pairs remain to breed on the Cheviot hills, along which the "trips" pass on their way northwards in the spring; and it appears probable that on some of the unfrequented Scotch mountains it is more numerous than is generally supposed. Mr. J. A. Harvie-Brown and Major H. W. Feilden have furnished some interesting details respecting the nesting of this species on the borders of Perth and Inverness (Pr. N. H. Soc. Glasgow, ii. pp.

237–241); Mr. Bateson found it breeding in Ross-shire; and Mr. D. Bruce has recently published (Macmillan's Mag. 1881, p. 347) an account of finding its nest on the Grampians, whence, many years ago, the Author obtained an egg. It probably breeds in several other counties in Scotland, and in the Orkneys, where the nest was found in 1850; but to the Shetlands it is only a rare visitant. In Ireland the Dotterel is certainly uncommon, and of late years there has been no evidence to strengthen Thompson's supposition that it might be found breeding upon the mountains of Tipperary.

Dotterels are well known as most excellent birds for the table; those that in spring and autumn are sent to the London market used to find ready sale at seven or eight shillings a couple. They were more numerous than usual there during the spring of the year 1845, when the Author counted seventeen couple at the shop of a poulterer at one time. Their sale during close-time being now prohibited by law, it is to be hoped that, with the protection afforded them on the spring migration, their numbers may increase.

Outside the British Islands the Dotterel has been observed in Novaya Zemlya, and has, perhaps, occurred as a straggler in Spitsbergen. It breeds in considerable numbers on the Fells of Norway and Sweden, and in some parts of the Ural mountains; but over the rest of the Continent, with the exception of the highlands of Styria, Bohemia, and Transylvania, on which its eggs and young have been taken, it appears to be only a migrant. On August 22nd, 1882, with a south-west wind, a great many crossed the island of Heligoland; and on September 4th a flock, going from east to west, took ten minutes to pass. In Northern Africa, Egypt, and Palestine, which appear to constitute its principal winter quarters, its numbers, according to Canon Tristram, are astonishing. It has occurred in Persia, and it ranges through Turkestan to Siberia, breeding on the Byrranga mountains in the Taimyr Peninsula, in 74° N. lat., and on the elevated ground whence the waters of the Irkut descend.

In Mongolia it was not found by the Abbé David, and Messrs. Blakiston and Pryer do not include it in their latest list of the Birds of Japan, but Cassin identified specimens obtained at Hakodadi on the cruise of the U.S. ship 'Portsmouth' (Pr. Ac. Nat. Sc. Philad. 1858, p. 195), and the Editor has seen examples obtained by Nordenskïold at Koljutschin, close to Behring's Straits.

The earliest mention of the Dotterel appears to be in the Northumberland 'Household Book' (*circa* 1512), in which the entry occurs: "Item Dottrells to be bought for my Lorde when thay ar in season and to be had at jd. a pece." Gesner, in his 'Historiæ Animalium,' lib. III. p. 615 (1585), cites a description sent to him by Dr. Key, and Willughby renders the passage as follows:—"It [the Dotterel] is taken in the night time by the light of a candle by imitating the gesture of the Fowler: For if he stretches out an Arm, that also stretches out a Wing; if he a Foot, that likewise a Foot: In brief, whatever the Fowler doth, the same doth the Bird; and so being intent upon mens gestures it is deceived, and covered with the Net spread for it. I call it *Morinellus* for two reasons, first because it is frequent among the *Morini* (Flemmings); and next because it is a foolish Bird even to a Proverb, we calling a foolish dull person a Dotterel."* Willughby goes on to quote an account given to "his very good friend Mr. Peter Dent, of Cambridge," by a gentleman of Norfolk, who told him that "to catch Dotterels six or seven persons usually go in company. When they have found the Birds, they set their Net in an advantageous place; and each of them holding a stone in either hand, get behind the Birds, and striking their stones often one against another, rouse them, which are naturally very sluggish; and so by degrees coup them and drive them into the Net. The Birds being awakened do often stretch themselves, putting out a Wing or a Leg, and in imitation of these, the men that drive them thrust out an Arm or a Leg for fashion sake, to comply with an old custom. But he thought that this imitation did not conduce to the taking of them, for they seemed not to mind or regard it." To this superstition Drayton alludes (Polyolbion, 25th Song)), where he says :—

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* Ornithology, p. 309. In the original of Gesner, Dr. Key also gives the derivation of *morinellus* from μωρός, dull.

> "The *Dotterell,* which we thinke a very daintie dish,
> Whose taking makes such sport, as man no more can wish.
> For as you creepe, or cowere, or lye, or stoupe, or goe,
> So marking you (with care), the Apish bird doth doe ;
> And acting everything, doth never marke the net,
> Till he be in the Snare, which men for him have set."

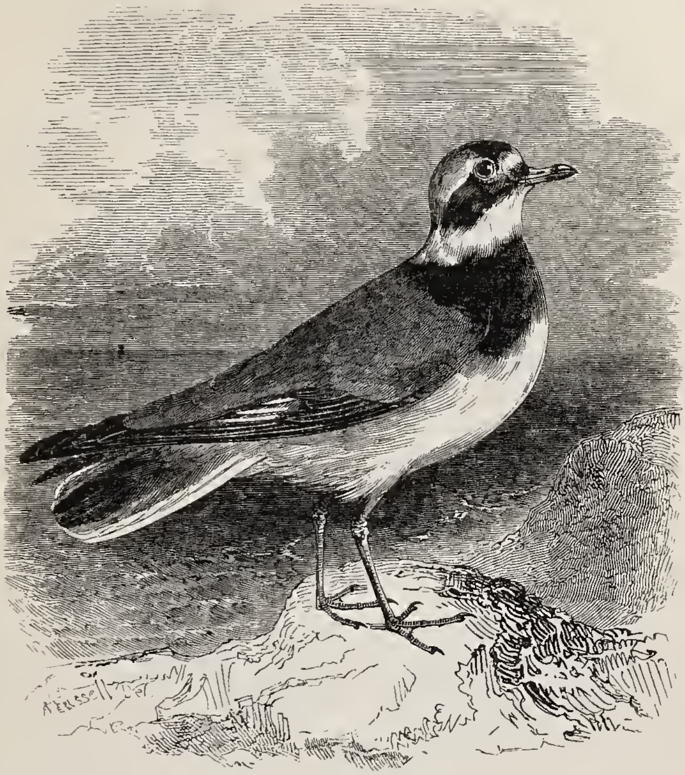
And he expresses the same idea in some 'Panegyricke Verses,' prefixed to 'Coryat's Crudities' (1611).

It also appears that the bird was taken with Hawks. Mr. Harting has contributed to Stevenson's 'Birds of Norfolk' (ii. p. 82) some interesting extracts from a curious MS. diary kept by Hans Jacob Wurmser v. Vendenheym, who accompanied the Duke of Wurtemberg to England in 1610, and found King James I. at Thetford, on the 7th May, hare-hunting and hawking. The next day, "apres que son E[xcellence] eut disné avecq sa Ma^{te}, le Duc de Lenox qui l'estoit venu visiter devant disné le menu à la chasse où l'on courrut le lievre, fit voller un espervier et prirent des Doterelles, oiseau qui se laisse prendre par une estrange manière ainsy que nous avons veu. Et qui se peult mieulx dire qu'escripre." With reference to the predilection of James I. for this mild form of sport, an amusing anecdote will be found in Hone's 'Every-Day Book,' 1826, p. 645, under date of May 10th, which used to be known in the borders of Hertford and Cambridgeshires as 'Dotterel-day.' As regards the action of stretching out a wing alternately, it is not peculiar to Dotterel, or even to members of the Plover tribe ; many birds do it after being in repose for some time, and in Hawks it is called "mantling" by falconers.

The adult bird, in its summer plumage, has the beak black ; the irides dark brown ; the top of the head and nape of the neck, blackish-brown, bounded on the side and behind by a band of pure white ; the ear-coverts, the neck, and back, ash colour ; the scapulars, wing-coverts, and tertials, ash-brown edged with buff; wing-primaries ash-grey, the first with a broad white shaft; tail-feathers greyish-brown; those in the middle tipped with dull white, the three outside feathers with broad ends of pure white; the chin and sides of the neck white; the front and sides of the neck below ash-grey; from shoulder to shoulder, across the breast, is a band of white, margined above and below with a dark line; breast rich fawn colour, passing to chestnut; belly black; vent and under tail-coverts white, tinged with buff; under wing-coverts and axillary plume greyish-white; legs and toes greenish-clay colour; the claws black. Willughby has remarked, and subsequent observers have confirmed his statement, that the females are larger and more brightly coloured than the males. In younger birds the top of the head, neck, and mantle are streaked and mottled with buff.

The whole length is nine inches and a half. From the carpal joint to the end of the wing, six inches; the wing in form pointed; the first quill-feather the longest; the average weight about four ounces: but the Author has seen one example that weighed six ounces and a half.

Mr. Heysham's description of a young female, three weeks or a month old, killed on Robinson July 25th, 1835, is as follows:—"Forehead, throat, and sides of the face, cream-yellow, covered with small spots and fine streaks of greyish-brown. Crown of the head, occiput, and also the feathers on the back, dark brown, all more or less broadly edged with buff-orange. Scapulars and wing-coverts olive-green, deeply edged with reddish-white; tail the same, finely margined with white, the centre feathers broadly tipped with reddish-white, and the three lateral ones on each side ending in a large irregular whitish spot. Sides of the neck, flanks, and a broad band above each eye, buff-orange, the former finely streaked with greyish-brown. Breast cinereous, slightly tinged with reddish-white, and marked on each side with large spots of olive-green. Belly white, finely spotted here and there with greyish-brown. Bill black. Irides dark brown. Legs pale olive-green; soles bright yellow."


A Russell Del.

Ægialitis hiaticula (Linnæus*).

THE RINGED PLOVER.

Charadrius hiaticula.

Ægialitis, *Boie*†.—Bill much shorter than the head, rather slender, straight to the end of the nasal furrow, which extends beyond the middle of the bill, then slightly raised, but bent downwards at the tip; nostrils small, and linear. Legs moderately long, slender, bare for a short distance above the tarsal joint: tarsi reticulated. Toes three only, slightly webbed at the base. Tail broad, slightly rounded. Wings long, pointed; the first quill the longest; the inner secondaries attaining the tip of the third primary.

This prettily-marked Plover is found throughout the year on most of the shores of the British Islands, but more particularly frequents bays and flats along the coast where the sea at its ebb retires to a distance, leaving extensive surfaces of sand or shingle. This bird also frequents the sides of large rivers, and is not unfrequently found about the margin of inland lakes and large ponds. The observations of Scales, Hoy and Salmon, have long since established the fact of its breeding on the sandy warrens of Norfolk and Suffolk, at a considerable distance from the sea; and, from the more recent and interesting experiences of Professor Newton and his brother published in Mr. Stevenson's 'Birds of Norfolk,' it appears that the 7th February is the earliest, and the 1st September the latest, date on which the birds were observed on Thetford Warren, where an egg has been taken so early as the 23rd March. By the middle of April laying has become general, and there can be little doubt that the same bird lays more than once in the same season, even when she has not been deprived of the first clutch. Incubated eggs and freshly-hatched young have been found by the Editor so late as the first week in August. In the north of England, and in Scotland, where the species is exceedingly abundant, and breeds on the shores of the inland lakes, as well as by the sea, nesting takes place somewhat later; and the same remarks will apply to a great part of Ireland.

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* *Charadrius Hiaticula*, Linnæus, Syst. Nat. Ed. 12, i. p. 253 (1766).

† Isis, 1822, pp. 558 and 559.

The nest is only a slight hollow in the sand, in which its four eggs are deposited; but sometimes this cavity is lined or covered with a number of small stones about the size of peas, upon which the eggs are laid, and this habit has gained for the Ringed Plover in some counties the provincial name of Stone-hatch.* Many deposit their eggs in any accidental depression on a bank of sand, broken shells, or shingles above high-water mark. The eggs, which measure about 1·4 by 1 inch, are of a pale buff or cream-colour, spotted and streaked with ash blue and black. This bird has been known to lay four eggs four times in succession in the same season—each set, when completed, being taken away; the later ones were smaller than usual, and altered in form and markings, a natural consequence of exhaustion. The parents are greatly attached to their young, and practise various devices to draw off any intruder from their charge, while from the great similarity in colour to the surrounding materials, either the eggs or the young are very difficult to find. The latter can run as soon as they emerge from the shell. They feed on worms, spiders, beetles, and, when at the edge of the sea, on the various species of the thinner-skinned crustacea, as shrimps, sand-hoppers, &c., and, with these, are taken particles of grit to aid digestion. The note of this bird is a melodious whistle, and when alarmed resembles the word *pen-y-et;* but during the pairing time the male has a distinct love-call.

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* It is frequently called the Ringed Dotterel: a name which, shortened to Dotterel, has often given rise to misunderstandings.

In the autumn those birds which have frequented the inland localities come down to the coasts, and a partial migration southward takes place; the gaps being filled by arrivals from other, and chiefly northern, latitudes. In spring they return, but whereas the birds which are more or less resident, and also the visitors from the north, belong to a large and comparatively bullet-headed form with a dull-coloured mantle; they are followed in May by numerous individuals of a small size, more slender form, darker mantle and more sharply defined coloration. This form has even been given specific rank under the name of *Æ. intermedia* (Ménétries), for which, however, there do not seem to be sufficient grounds. Apparently the smaller race is a southern form, which only visits our shores during the spring migration, nor is it easy to say where its members go on leaving, as they do after a short stay: with perhaps a few exceptions on the south coast, particularly in Sussex, where they are believed to breed. Individuals of this smaller race have frequently been recorded as Little Ringed Plovers (*Æ. curonica*), but this, which will next be treated, is a perfectly distinct species and one whose apparitions, even in our southern districts, are exceedingly rare and irregular.

Malmgren states that a brood of the Ringed Plover was found, and had probably been bred, on the Seven Islands in lat. 80° 45′ N., and the bird appears to have been obtained in Spitsbergen. It breeds in Iceland and Greenland, and on the late Arctic Expedition, Major Feilden obtained a female which had apparently been nesting in lat. 78° 48′ N. in Buchanan Strait, Smith Sound; but birds from other and more western localities in Arctic America have either been proved, or may fairly be supposed to be, examples of an allied species, *Æ. semipalmata.* The latter is smaller than our bird, and has no white patch above and behind the eye: the pectoral band is narrower, and the middle and outer toes are united at their base by a very distinct web. Tracing the arctic range of the Ringed Plover eastward, the species is found in summer along the whole northern line of the Old World from the North Cape, and Novaya Zemlya, to the winter quarters of the "Vega," close to Behring's Straits.

Throughout Europe the Ringed Plover is generally distributed in suitable localities, becoming rarer in the interior of compact countries like Russia, and more abundant in those which present a varied coast line, or large rivers. In the northern regions it is a migrant, but in the temperate portions it is resident, and some of the largest individuals are to be found amongst those which permanently inhabit the British Islands, and the opposite coasts of France and Holland. In the southern portions of Europe the smaller race predominates, and to this, in all probability, belong the birds which are found in Madeira, the Canaries, and northern Africa, and which range in winter to the southern extremity of that continent. In Egypt, Captain Shelley obtained none but the smaller individuals, but it is tolerably certain that some of the larger race also go as far as the Red Sea. In Turkestan it is said to breed; but in China it appears to be replaced by *Æ. placida*, Gray, which has also occurred in India, and has been recorded in error as our bird. A single specimen of the Ringed Plover was, however, obtained by Dr. Scully at Gilgit, and one been recorded by Mr. Hume from Sultanpur, about thirty miles south of Delhi. (Str. Feath. viii. p. 197.) The late Mr. Gould has stated that he possessed an undoubted specimen from Port Stevens, in Australia.

The male in summer has the beak black at the point, orange-yellow at the base; the irides brown; forehead white, with a black band above it reaching to the eyes on each side; lore, space under the eyes, and the ear-coverts, black; top of the head and nape of the neck hair-brown; below this, and all round the neck a collar of white, followed by a gorget of black; the back, wing-coverts, and tertials, hair-brown; the wing-coverts tipped with white, forming a continuous bar of that colour, which is conspicuous when the bird is on the wing; the primaries almost black, the distal portion of each quill-shaft white; upper tail-coverts and the base of the tail-feathers hair-brown, passing into greyish black towards the end, the middle pair the longest, the next four on each side tipped with white; the outer feather on each side entirely white in the fully adult, but spotted in others; chin and throat white; across the neck a broad collar of black; breast, belly, vent, and under tail-coverts, white; under wing-coverts and the axillary plume white; legs and toes orange; the claws black.

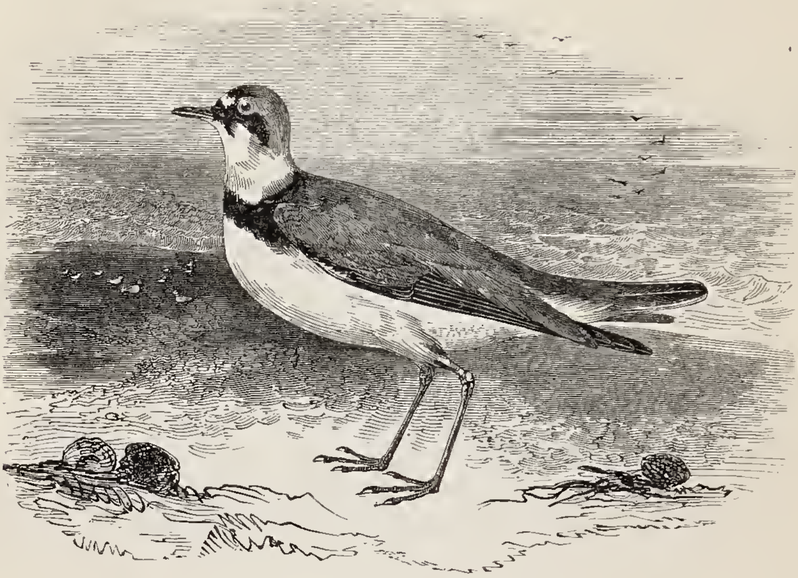
The whole length of the adult bird is seven inches and three-quarters. From the carpal joint to the end of the wing, five inches and a half: the wings pointed in shape; the first quill-feather the longest.

Adult females in summer have the black bands and collar narrower than in the males, and the colours not quite so decided; both sexes in winter have the black and the white less pure in colour.

Young birds of the year have the beak almost entirely black; they have no black band over the white one on the forehead; the lore, ear-coverts, and the collar round the lower part of the neck are only dusky brown; legs and toes pale yellow.

Varieties of this species are not common, but Mr. F. Bond has one, shot in Orkney, which is nearly white with dusky markings; and Mr. J. Whitaker, of Rainworth Lodge, Notts, has one with a stone-buff mantle.

LIMICOLÆ. *CHARADRIIDÆ.*



Ægialitis curonica (Gmelin*).

THE LITTLE RINGED PLOVER.

Charadrius minor.

Of this rare visitant to Britain, the late Mr. Gould wrote in the 'Birds of Europe,' "We are indebted to our friend Mr. Henry Doubleday, of Epping, for the loan of an example of this elegant little Plover, which he informs us was taken at Shoreham, in Sussex;" and it would appear that this specimen was correctly identified. As regards the late Mr. Lubbock's statement in his Fauna of Norfolk, that "two specimens of this bird in the Norwich Museum were believed by Mr. Denny, the curator, to have been killed in the county; but the fact was not noted down at the time;" Mr. Stevenson writes that only one of these is now in existence, and the evidence is too vague to justify its claim to be considered a Norfolk bird.

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* *Charadrius curonicus,* Gmelin, Syst. Nat. i. p. 684 (1788). So-called because it inhabits Curonia (Courland).

The late Mr. E. H. Rodd obtained a specimen shot on the 23rd October, 1863, at Trescoe, in the Scilly Islands, by his nephew, Mr. F. R. Rodd, who wrote as follows:—"It rose, and its note was a single sharp whistle, not like that of the Common Ringed Plover, and shorter in duration. Its flight was remarkably Stint-like, which it also resembled in its tameness." On the 30th August, 1864, Mr. J. E. Harting shot an immature male example at Kingsbury Reservoir, in Middlesex, and took it in the flesh to Mr. Gould, together with an adult female of the Common Ringed Plover shot at the same time and place. Accurate measurements and weights of each were taken, and their sternums were subsequently compared, the results being given in detail by Mr. Harting in the 'Birds of Middlesex' (p. 152). He was afterwards informed by Mr. R. H. Mitford, of Hampstead, that he also shot an immature Little Ringed Plover on the 20th August of the same year, at the same piece of water, but that owing to an unfortunate mistake, it was not preserved. Mr. W. Borrer, of Cowfold, Sussex, has also an undoubted example shot near the mouth of Chichester Harbour in May, some years ago.*

Besides these genuine examples, a number of 'Little Ringed Plovers' have been from time to time recorded in the pages of 'The Zoologist' and elsewhere, without any evidence being adduced to show that they were not specimens of the small race of the Common Ringed Plover, and such in fact some of them are now candidly admitted to be by their owners. The real Little Ringed Plover may, however, be distinguished from *Æ. hiaticula*, by its smaller size and slenderer form, being one-fourth lighter in weight; but especially by the colour of the *shafts* of the *primaries*, which are all dusky, except the outer one, which alone is white throughout. In the larger species there are flecks of white crossing the whole of the primaries, and forming when the wing is extended, a very visible band. These points should suffice to distinguish the two species at any age.

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* Mr. Knox, in the 3rd Edition of his 'Ornithological Rambles in Sussex,' p. 224 (1855), states, without further details, that three adult and two immature examples of the Little Ringed Plover, were killed near Shoreham, in September, 1853.

The Little Ringed Plover also exhibits some difference in its habits, preferring the sides of rivers rather than the shores of the sea. On this point the late Mr. Hoy, who had attended to the distinguished peculiarities of this species on the Continent, remarks, "The Little Plover appears to be very rarely found on the sea coast; but frequents in preference the banks of rivers, where it breeds. It lays its eggs on the sand, not a particle of grass, or other material being used. It is very partial to sand banks forming islands, which are often met with in some of the larger rivers of the Continent. It may also frequently be found during the breeding-season upon those large extents of sand which are met with at some little distance from the borders of rivers, overgrown in part with a coarse wiry grass." The eggs are generally four in number, and measure 1·15 by ·85 in., of a pale yellowish stone colour, with numerous small spots of dark brown, without the bold blotches found in the egg of the Ringed Plover.

The food is similar to that of the preceding species. The usual note is rendered by Naumann as *dia* or *dea*, uttered very quickly, but the love call is a much more prolonged trill.

It is somewhat remarkable that the Little Ringed Plover should so rarely be obtained on our shores, inasmuch as it is a common species in summer in the northern portions of the Continent. It breeds in Scandinavia, Russia, the greater part of Germany, and in Belgium, although in Holland it appears to be a bird of passage; and it nests regularly in some parts of France, Spain, Italy, and along all the northern side of the Mediterranean. Principally a winter visitant to North Africa, it descends that continent to the Gaboon on the west, and to Mozambique on the east; and has also occurred in Mauritius. The most northern locality on record is probably Ust Zylma, on the Petchora, where a solitary specimen was obtained by Messrs. Seebohm and

Harvie-Brown; but south of that, it occurs throughout Siberia and Turkestan, where it breeds up to an altitude of 4,000 feet; and in China and Japan, where it also breeds. It can be traced from Palestine, through Persia and Afghanistan, to Kashgar, where Dr. Scully obtained it at an elevation of 12,000 feet, and procured a young bird in the month of December; it visits the Mekran coast and the greater part of India in winter; in Ceylon it is said to be resident; and it ranges onwards from Burmah to the Philippines and the Moluccas.

A small Plover, said to have been obtained at San Francisco, and described as a new species by Mr. Ridgway, under the name of *Ægialitis microrhyncha*, was subsequently identified by him with *Æ. curonica*, but Mr. Ridgway now considers it very doubtful whether the locality given on the label was correct.

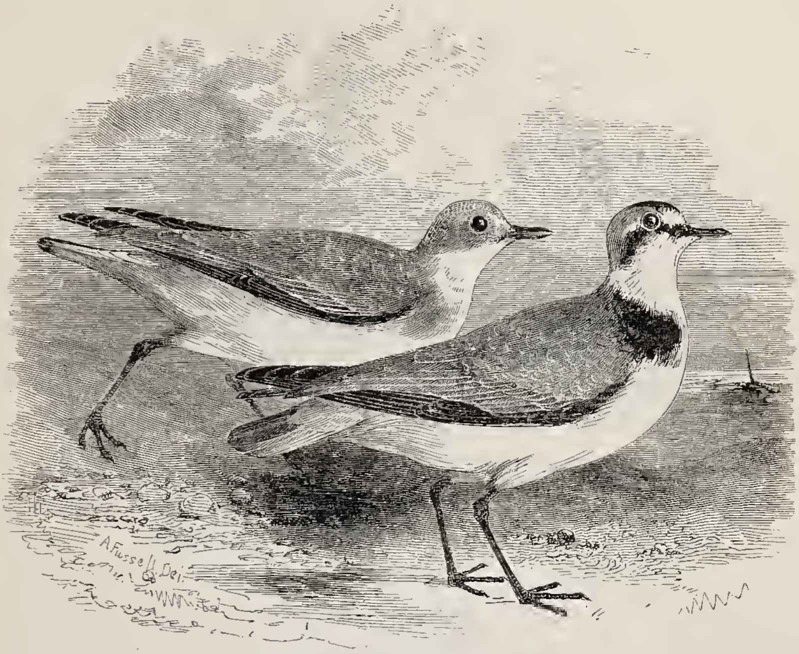
In the adult bird the beak is black, except at the base of the lower mandible, where it is yellow; the irides dark brown; eye-lids bright yellow; the forehead white, with a black patch above it extending to the eye on each side; top of the head and the occiput ash-brown; lore and ear-coverts black; nape of the neck white; below this a collar of black; back, scapulars, wing-coverts, tertials, rump, and upper tail-coverts, ash-brown; primary and secondary wing-feathers dusky brown; these and the greater wing-coverts edged with white; the first primary quill-feather only with a broad white shaft; tail-feathers ash-brown at the base, darker towards the end; the five outer tail-feathers on each side white at the end, this colour increasing in extent on each lateral feather, the outer one on each side having only a dusky spot on the inner web, but this appears to be constant at all ages: chin and throat white, this colour extending from the latter round the nape of the neck; below this and above the breast is a collar of black; the breast itself, the belly, vent, and under tail-coverts, pure white; legs and toes dull yellow; the claws black.

Adult specimens generally measure six inches and one-quarter. From the carpal joint to the end of the wing, four inches and three-eighths; the first quill-feather but very little longer than the second, and the longest in the wing.

Adult females have the white and black frontal bands narrower than the males, and these markings are also less perfectly defined.

Young birds of the year want all the decided black markings which distinguish old birds, and the ash-brown feathers of the back and wing-coverts have buff-coloured margins.

A mounted specimen of the American Killdeer Plover, *Ægialitis vocifera*, was shewn to Mr. P. L. Sclater in 1862, by Mr. J. R. Wise, who stated that it was shot about a mile from Christchurch, in Hampshire, in April, 1857, and taken in the flesh to Mr. Hart, the bird-stuffer, who sold it to its then owner, Mr. Tanner. In recording the above (Ibis, 1862, pp. 275–277), Mr. Sclater remarked that some corroborative evidence of the bird having been brought to Mr. Hart "in the flesh" would still be desirable; but he saw nothing very improbable in the alleged facts, as other American species of less extended range and more limited powers of flight have already occurred in this country. The Killdeer Plover ranges from Arctic America to Mexico and Guatemala, and visits the Bermudas regularly from November to March, but there is no other instance on record of its occurrence in Europe.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ÆGIALITIS CANTIANA (Latham [*]).

THE KENTISH PLOVER.

Charadrius Cantianus.

THE KENTISH PLOVER was first described and named by Latham, from specimens sent to him by Dr. Boys, which were killed at Sandwich, in Kent, in the years 1787 and 1791. It is a species with a broken or interrupted pectoral band, therein differing from the preceding species, and arrives on the shores of England in April and departs in August, but in Scotland it is as yet unknown. Bridlington, on the Yorkshire coast, is at present the most northern locality from which it has been recorded; and it is of rare occurrence in Lincolnshire.[†] In Norfolk, Mr. Stevenson informs the Editor that it is a more frequent visitant on migration than was formerly supposed, when the bird was recognized by few; but it is not until the shores of Kent and Sussex are reached that the species is to be found breeding even in moderate numbers. The shingle between Rye Harbour and Dungeness was once a favoured locality, but sad havoc has been made there by collectors. In Devonshire, as Mr. Gatcombe informs the Editor, two were killed at Plymouth breakwater in May some years ago, and another was shot in autumn in the Hamoaze; and in Cornwall, Mr. Rodd only records two occurrences in the month of April, and one in August. In the Channel Islands it is not uncommon, especially on Guernsey, and the neighbouring islets.[*] In Ireland it is of very rare occurrence.

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[*] *Charadrius Cantianus*, Latham, Suppl. ii. to Gen. Synop. p. lxvi. (1801).

[†] Cordeaux, 'Birds of Humber District,' p. 93.

With the exception of a recent occurrence in Norway, recorded by Mr. Collett, the Kentish Plover has not been found beyond the southern districts of Sweden, nor is it at all common on the Baltic coast of Germany, but westwards it is fairly distributed from Denmark to the extremities of France. On the coast of the Spanish Peninsula and for a short distance inland, it is abundant, and although somewhat irregularly distributed, it is found breeding throughout the islands and northern shores of the Mediterranean. In the interior of the Continent it is almost unknown, for of the three species, this is by far the most partial to salt water. On the shores of the Black Sea it is very numerous, except in winter, and in Asia Minor it appears to be resident; in fact its line of residence reaches along the coast of North Africa to the Canaries, Madeira and the Azores. Some individuals go as far south as Damaraland, and even to Cape Colony. From Turkestan, where it breeds at a considerable altitude, it can be traced to the salt lakes of Dauria and Mongolia, and to the coasts of China and Japan[†]; and it is found along the coasts and on the large rivers of India down to Ceylon, where the resident race becomes somewhat small.

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[*] Cecil Smith, 'Birds of Guernsey,' pp. 125–127.

[†] In Southern China and the Malay Archipelago there is a closely-allied resident form, *Æ. peronii* (Temm.), and *Æ. dealbata* (Swinhoe), distinguished by its yellow tarsi and yellow base to the bill.

In Burmah it is abundant in winter; it has occurred in the island of Mindanao; and Messrs. Finsch and Hartlaub record it from the Pelew Islands. In America this widely ranging bird is replaced by a closely-allied species, *Æ. nivosa*, which in breeding-plumage has the lores white, and not black.

The habits and food of this little Plover resemble those of the Ringed Plover. The female makes little or no nest; but lays her eggs in a small hollow in the sand, or amongst fine shingle and broken shells. Mr. R. H. Mitford, who has examined a considerable number of clutches, writes to the Editor that he never found them to consist of more than three, even when the eggs were incubated; and the Editor's experience of the average is similar; still he has found four, both in Spain and in the Channel Islands. In a clutch of four mentioned by Mr. Cecil Smith, the eggs were nearly upright in the sand, the small end being buried, and the thick end just shewing above the sand. They are of a rather rough texture, of a yellowish stone-colour, spotted and scrawled with black and measure 1·2 by ·9 in. Mr. Dombrain (Zool. 1880, p. 138) says that occasionally they are deposited on a heap of sea-weed thrown up by a very high tide. If put off the eggs, the bird will retire to a short distance, and utter a plaintive whistle, run a few yards, then fly a little, then drop and run again. As soon, however, as the young are hatched its manner changes: it will then fly closely round, accompanying each stroke of the wings by a sharp whistle, then drop suddenly, and cower, with expanded wings and tail. Each pair appears to frequent a limited area, and when disturbed, fly but a short distance, returning quickly to their starting point.

The adult male in summer has the beak wholly black; the irides brown; the forehead white, the same colour being continued over the eye and a little beyond it over the ear-coverts; above the white on the forehead is a patch of black, which extends only to the edge of the white, not to the eye-lid: top of the head and the occiput rich reddish-brown; from the base of the beak to the eye a black streak;

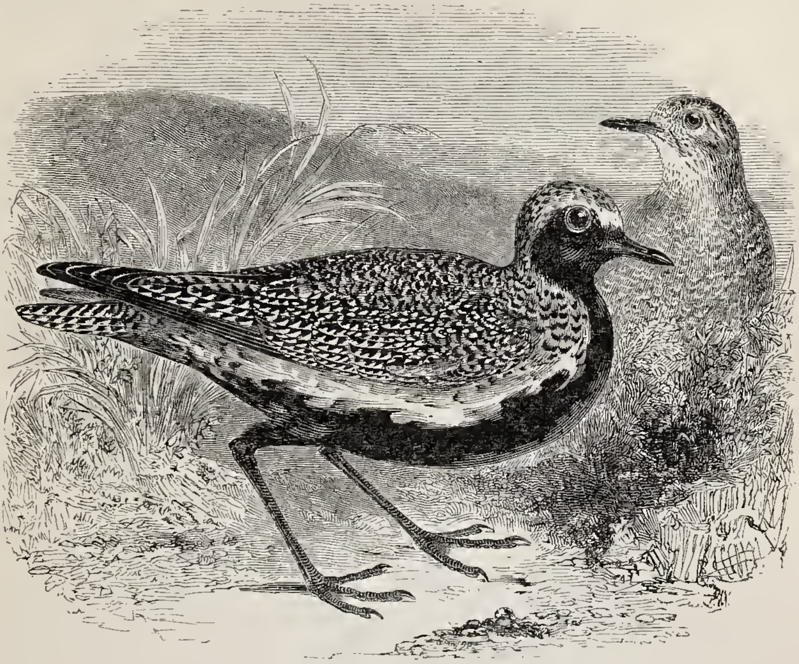
ear-coverts also black; nape of the neck white; back, scapulars, wing-coverts, tertials, upper tail-coverts, and the base of the tail-feathers ash-brown or light hair-brown; the wing-primaries dusky black; the distal part of the shafts of the quill-feathers white; the two middle tail-feathers the longest, and dusky black at the end; the two outer tail-feathers on each side wholly white; chin, cheeks, sides of the neck and the throat, pure white; just in advance of the carpal joint, or point of the wing, on each side, is a patch of black, not continued round the front; the breast, belly, vent, and under tail-coverts white; under wing-coverts and axillary plume white; legs, toes, and claws dark slate-colour.

The whole length is almost seven inches. From the carpal joint to the end of the wing, four inches and one-quarter: the wing pointed; the first quill-feather the longest.

In the adult female the dark colour on the head and neck is less decidedly black, and occupies a smaller surface.

Young birds of the year have no black colour above the white on the forehead; and the lore, as well as the ear-coverts and the patch in front of the bend of the wing are dusky-brown; the beak, legs, and toes, black. The young in down may be distinguished from those of the Ringed Plover by their more rufous tint.

The illustration represents an adult male killed in summer, and a young bird of the year killed in autumn.



Charadrius pluvialis, Linnæus.*

THE GOLDEN PLOVER.

YELLOW PLOVER. GREEN PLOVER.

Charadrius pluvialis.

Charadrius, *Linnæus*†.—Bill shorter than the head, straight, rather slender, the upper mandible straight to the end of the nasal furrow, then slightly raised, and decurved to the pointed tip ; nostrils subbasal and linear. Legs of moderate length, slender, bare for a short distance above the tarsal joint : tarsi reticulated. Toes three only, all directed forwards, slightly webbed at the base. Wings long, pointed in shape ; the first quill-feather the longest ; inner secondaries much shorter than in *Eudromias*, and somewhat shorter than in *Ægialitis.*

The Plovers of the genus *Charadrius,* as now restricted, are remarkable for assuming in the spring, and retaining during summer, a plumage differing considerably from that which distinguishes them from the time of the autumn moult through the winter till the following spring. This alteration of colour, which is common to both sexes, consists, in the Golden Plover, of a decided change from a dull greyish-white to black, which pervades the whole of the under surface of the bird from the chin to the belly. Some new feathers, which are obtained in the spring, are black, whilst the old white feathers of winter may be seen in change to black, some of them bearing almost every possible proportion of well-defined black and white on the same feathers, the colouring secretions having equal influence over the old as well as the new feathers. Such birds are said to be subject to a double moult, but that of the spring is only partial, not affecting the strong feathers of the wings and tail; the entire moult, including the flight and tail feathers, only occurs in these birds once in each year, and that in the autumn.* This latter moult begins in September and is generally completed by November; the partial spring change commences in February and is over by the middle of May. Male birds are generally observed to have acquired an alteration in the colour of their feathers more rich and perfect than that of the females; but this is not always the case, as the extent of the change appears to depend upon the constitutional vigour and powers of the individual bird, whether male or female, and specimens of the latter sex are occasionally seen in a summer dress as rich and as perfect as that of the finest male.

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* *Charadrius Pluvialis,* Linnæus, Syst. Nat. Ed. 12, i. p. 254 (1766).

† *tom. cit.* p. 253.

In the 'Fabliaux' of the xiiith Century we read of "Ploviers et corliex [Curlews] en hastis" [*i.e.* on spits]; and Belon, in 1555, writing of the *Pluvier* and the *Guillemot*, by which he means the adult and the young of this species, says, "Il semble qu'il est ainsi nommé [Pluvier] pource qu'on le prend mieux en temps pluvieux qu'en nulle autre saison." As a delicacy it has long been esteemed for the table, and in the L'Estrange "Household Book" for 1520, the price of Golden Plovers appears to have been as high as about 2*d.* each.

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* See observations on the laws which appear to influence the assumption and changes of plumage in birds in the Transactions of the Zoological Society, vol. i. page 13; also 'The Zoologist,' 1879, pp. 81-89.

The Golden Plover is found during summer, breeding on the high hills and swampy grounds of Great Britain and Ireland. In England it is believed to breed sparingly in Devonshire, and perhaps in Somerset, and it is known to do so in Breconshire and some other counties of Wales and its borders. From Derbyshire onwards it becomes more abundant as a nesting species, and in Scotland it is generally distributed; being especially numerous in Sutherlandshire. It is a familiar bird on the moors of the Orkney and Shetland Islands, and in the Hebrides the numbers which descend to the sandy pastures and shores are said by Macgillivray to be astonishing. Throughout Ireland it is to be found breeding in suitable localities; and early in autumn enormous flocks or 'stands' visit the lowlands and coasts of that island. Sir R. Payne-Gallwey says that it is the universal custom of the Irish fowler to call the Golden Plover the 'Grey,' whilst the true Grey Plover is frequently alluded to as the 'White Plover' or 'Sea-Cock.'* The largest assemblages on the coast are to be witnessed at the time when the moonlight enables them to feed at night.

The Golden Plover lays four eggs, which are large in proportion to the size of the bird, and very handsome: of a yellowish stone-colour, blotched and spotted with brownish-black, measuring 2 by 1·4 in. About the middle of May, in this country, but earlier in some parts of the Continent, the females begin to lay, making but little artificial nest, a small depression in the ground amidst the heath being generally taken advantage of, and lined with a few dry fibres and stems of grass. The male sometimes takes part in the duties of incubation, for Mr. R. Collett shot one from four eggs on the 19th June, 1872, in the valley of the Maalselv, in Norway, the female not being observed. The young, when excluded, are covered with a beautiful parti-coloured down of orange-tinted yellow and brown; they quit the nest as soon as hatched, and follow their parents till able to fly and support themselves, which is in the course of a month or five weeks, and during that period the old birds display great anxiety in protecting their young brood, using various stratagems to divert the attention of an enemy. They have only one brood in the season.

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* The Fowler in Ireland, p. 174.

The usual food of this species appears to be worms, slugs, beetles, and larvæ; and, when on the sea-coast, of small testaceous mollusca of the genera *Rissoa*, *Littorina*, and *Lacuna*, together with the fry of the common mussel; a little vegetable food is also to be found in the gizzard at times, and the seeds of the saline *Glaux maritima* are often swallowed, as well as numerous particles of grit.

The note is a clear whistling *Tlüi;* but during the courting-season the male utters a prolonged *Taludl-taludl-taludl-taludl.* During migration the cry of flocks passing overhead at night may often be heard over large towns, and of this Mr. Stevenson (B. of Norfolk, ii. p. 70) gives some remarkable experiences.

In autumn the various broods associate, forming flocks, and descend from the moors to the lowlands and sea-shores. According to Mr. Cordeaux the rule of migration upon the East coast is, a few old black-breasted birds early in August: often in company with Lapwings; followed by flocks of young birds in September and early October; and late in October, and in November, immense flights of old birds. Later in the year, any sharp, cold weather drives the flocks to the south and west, but during the early part of the season their line of migration is often unaccountably erratic. On the evening of the 22nd August, 1880, Major P. K. Seddon, when in his yacht at Spurn, saw thousands of Golden Plover passing *north* along the sea-shore in detached flocks. In the following year, on the 6th September, Mr. W. Eagle Clarke saw a long waved line, extending at least three or four miles, passing over Spurn, and extending far over towards the Lincolnshire coast, with direction to the *north.* It is difficult to surmise whence these large flights started. In 1882 young Golden Plovers commenced crossing Heligoland on the 9th of August. These migrants constitute a large proportion of the numbers which frequent our islands from autumn to spring, and by the beginning of March the return northwards begins.

The late Rev. Richard Lubbock, in his Fauna of Norfolk, says of these birds, "A great many are shot in the marshes. The early dawn is the time at which our fen-men seek them; they then fly about in close bodies, and will pass very near to any one remaining perfectly still. In the middle of the day they are very difficult of access. They seem to divide their time between the marshes and the uplands. If they are in a marsh all day they often move off to a ploughed field just as it is dusk, and *vice versâ;* if upon arable land, they go down to the marsh for the night, and it is truly called *pluvialis,* from its restlessness before bad weather. A few years back, one day in the end of December, I stood upon an eminence overlooking a level of marshes; the day was beautifully mild and bright. I was struck by the perpetual wheelings, now high, now low, of large flocks of this bird and the Peewit. They were not still for a moment, and yet I could discover no cause of disturbance. Some hours afterwards I went again to the same hill, and found them in the same perturbed state. I was so persuaded that this restlessness was the harbinger of stormy weather, that I wrote a letter excusing myself on that plea from fulfilling an engagement at a distance. The next morning came, calm and mild as the preceding; the Plovers, however, had all departed, not one was to be seen. About 5 P.M. the wind began to howl, signs of tempest came on, and before morning so much snow fell, that in the lanes were drifts six and seven feet in depth."

The Golden Plover is common in summer in Iceland, and in the Færoes, and is generally distributed at that season throughout Scandinavia, Northern Russia, and Northern Germany. It also breeds on the moors of Brabant and Luxembourg, but in France, and in Central and Southern Europe it only occurs on migration, or in winter. A straggler to Madeira, it can be traced down the west coast of Africa to Cape Colony; and it winters in the northern portions of that continent, and in Asia Minor.

In Siberia Mr. Seebohm met with it breeding as far east as the *tundras* near the mouth of the Yenesei, but there he found in the predominance an allied species, the Eastern Golden Plover, *Charadrius fulvus*, Gm. The latter may easily be distinguished from our bird by its smaller size, its more naked tibia, and especially by the colour of the *axillaries*, which are *smoke-grey*, and not white as in our bird. The Eastern species has a wide range, from Siberia through Eastern Asia to Polynesia, Australia, and Southern Africa, and as a straggler it has occurred on the Red Sea; in Malta, twice; at Malaga, once; at Lublin in Poland, once; and in Heligoland, thrice. In December, 1874, an example was found in Leadenhall Market amongst a lot of Golden Plovers, and was said to come from Norfolk (Ibis, 1875, p. 513), but although there is nothing improbable in this statement, the evidence appears to be hardly strong enough to justify the admission of this species as a British bird. Across the entire continent of North America, ranging southwards in winter, is found *Ch. virginicus*, a form which seems to differ from *Ch. fulvus* in being, on the average, somewhat larger, and in having shorter inner secondaries. To this form has been ascribed a bird killed on Heligoland (Ibis, 1877, p. 165); and in the autumn of 1882, Mr. J. H. Gurney, jun., found in Leadenhall Market an example which had, no doubt, been killed somewhere in Western Europe (Ibis, 1883, p. 198). To complete the history of the range of our Golden Plover, it must be said that one was shot on the Noursoak Peninsula, Greenland, in breeding-plumage, in the spring of 1871, and Dr. Finsch believed that this species bred in East Greenland; it has also been said to have been obtained at Godhavn, and in Bellot Straits (Ibis, 1860, p. 166), but perhaps it was not accurately distinguished from its American congener.

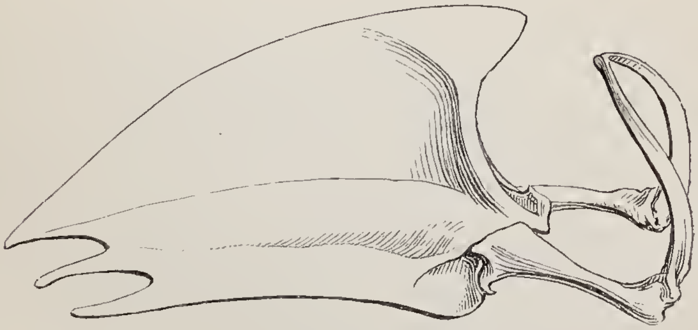
The adult bird in its summer plumage has the beak black; the irides very dark brown, almost black; on the forehead a band of white; top of the head, the nape of the neck, the back, wing-coverts, tertials, rump, and upper tail-coverts, greyish-black, the edges of all the feathers varied with triangular-shaped spots of gamboge-yellow; wing-primaries almost black; tail-feathers obliquely barred with shades of greyish-white and brownish-black; the lore, chin, sides of the neck, throat, breast, and all the under surface of the body as far as the vent, jet black, bounded on the sides with a band of white below the wing; axillary plume elongated, and pure white; under tail-coverts white.

In winter the chin is white; front of the neck and the breast, white, tinged with dusky, and spotted with dull yellow; the upper surface of the body nearly as in summer; before and after the breeding-season the adult birds may be seen for a time with the breast of a mixed plumage of black and white.

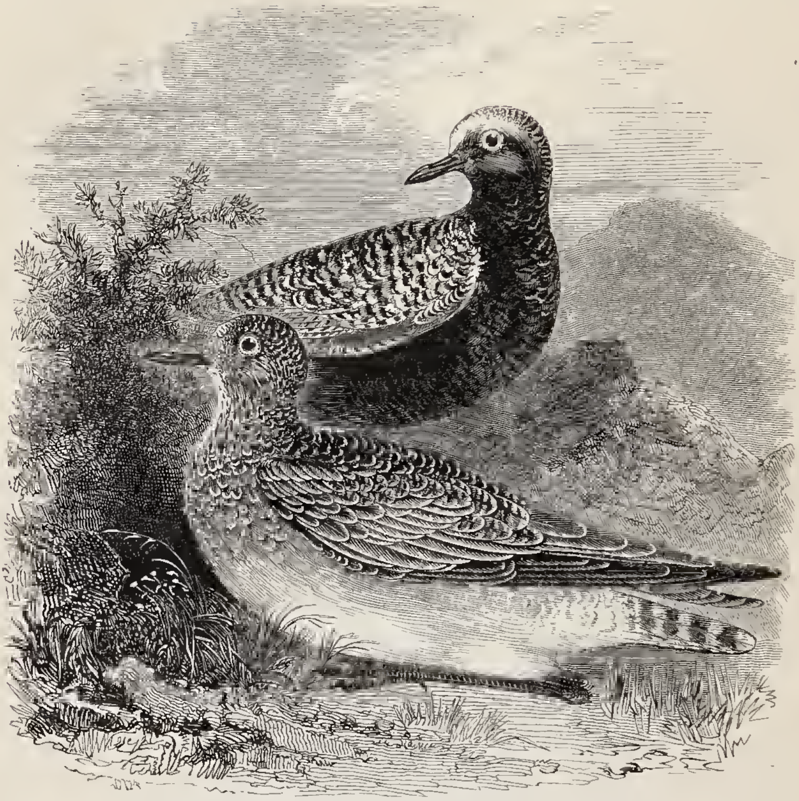
The whole length of an adult bird is rather more than eleven inches. From the carpal joint to the end of the wing, seven inches and three-quarters.

The plumage of adult birds of both sexes is nearly alike at the same season of the year; but young birds of the year during their first autumn have the breast much darker in colour than the same part of the old birds in winter, and may be distinguished throughout their first winter from parent birds by the greater proportion of dusky grey on the breast and belly.

The outline below represents the breast-bone of the Golden Plover.



LIMICOLÆ. *CHARADRIIDÆ.*



SQUATAROLA HELVETICA (Linnæus*).

THE GREY PLOVER.

Squatarola cinerea.

SQUATAROLA, *Leach*†.—Bill nearly as long as the head, rather strong, upper mandible straight to the end of the nasal groove which is long and wide: then raised and decurved to the tip; nostrils subbasal, linear. Wings long, pointed, the first quill-feather the longest. Legs of moderate length, slender, lower part of the tibia naked: tarsi reticulated. Toes four in number: three directed forward, and slightly webbed at their base, the fourth behind, rudimental, elevated.

IN its habits, its general appearance, and in its double moult, or periodical change to black on the under surface

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[*] *Tringa helvetica*, Linnæus, Syst. Nat. i. Ed. 12, p. 250 (1766), ex Brisson.

[†] Syst. Cat. M. & B. Brit. Mus. p. 29 (1816).

of the body during the breeding-season, the Grey Plover very closely resembles the Golden Plover, but the presence of a hind toe, though small, prevents its being included in the genus *Charadrius.* It is a larger bird than the Golden Plover, with a more robust bill, and looks whiter about the tail; its most distinguishing characteristic when on the wing is, however, in the colour of the axillary plumes, which are *black.*

The Grey Plover is by no means so abundant as the preceding species, and is, as a rule, more confined to the sea-coast and its vicinity during its visits, which extend from early autumn to late spring. A few old black-breasted birds return from their northern breeding-quarters by the end of July or beginning of August; the young arrive in August and September; and the bulk of the old birds come in October and November, by which time the majority have assumed the winter garb, although a black-breasted specimen was observed at Tetney by Mr. Cordeaux on the 21st October, 1873. On their return northwards, they may be observed on the sea-shore and mud flats in flocks of from twenty or thirty up to a hundred in May, by which time they have assumed the black breast. Some may be seen in June, and occasionally in July: doubtless birds which are not breeding that season, for there is no proof that any have ever nested in this country. In Ireland, although a regular visitant, it is less numerous than in England and Scotland, in which again it is, where localities are equally suitable, more abundant on the east than on the west coasts. Mr. Cordeaux thinks that of those which arrive on the Lincolnshire coast in the spring, comparatively few pass to the north of the Spurn; their course being apparently in the direction of the Baltic.

Mr. Collett is inclined to believe that the Grey Plover breeds on some of the fells of Norway, but absolute proof appears to be wanting. Along the whole of the coast line of Europe, it occurs on the double migration; and a limited number cross the Continent by way of the valleys of the Rhine and the Rhone, which lead up to the lakes of the Jura district: in fact the specific name *helvetica* is owing to the accident of the earliest described specimens having been procured by Réaumur in Switzerland. In Russia the valley of the Volga seems to form a line of migration, by which the flocks pass, in all probability, to the valley of the Kama, thence to the head-waters of the Petchora, and so to their breeding-grounds on the *tundras*. Beyond the Mediterranean, where birds in the fullest nuptial dress have been observed as late as the 23rd May, the range of the Grey Plover can be traced to the Canaries; and, in winter, all down both the west and the east coasts of Africa. Madagascar and the neighbouring islands; India, down to Ceylon; Malaysia; both sides of Australia, and Tasmania are also visited. On the coasts of China and Japan this Plover is a well-known migrant; and in Kamtschatka it probably breeds, as it is found there in summer; and it may fairly be assumed that it nests in suitable localities across the whole of Arctic Siberia. Passing westward, the Grey Plover is found in summer in Greenland where, however, it is rare; and Richardson has stated that its eggs were obtained on Melville Peninsula. Mr. R. MacFarlane, when collecting for the Smithsonian Institution, found several nests on the Barren Grounds east of Anderson River, in July, 1864, and others have since been obtained in Alaska. South of the Arctic circle the Grey Plover is only known in America as a migrant; and, as such, this cosmopolitan species ranges down to the islands of the West Atlantic, the Antilles, and the coast of Guatemala.

The first account of the nesting of the Grey Plover was given by Middendorf (Sibirische Reise, ii. p. 209*), who found it in the year 1843, breeding on the Byrrangá Mountains, Taimyr Peninsula, in 74°, and also on the Boganida, in 71° N. lat., where it was, however, less abundant than the Golden Plover. On the 26th June he took a clutch of four eggs, which he describes, and one of them is figured (*op. cit.* pl. xix. fig. 1); another taken on the Taimyr on 1st July, is figured by Professor Newton (P. Z. S. 1861, pl. xxxix.

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* Owing to a printer's error this page is numbered 290, and has been quoted as such.

fig. 2). It was not however until 1875 that any detailed account of the nidification of this species in the Old World was rendered available through the explorations of Messrs. Seebohm and Harvie-Brown on the *tundras* of the Petchora. Full particulars of their interesting discovery are published in 'the Ibis' 1876, pp. 222–230, and four representative specimens of the eggs are figured (pl. v.). The first nest was found on the 22nd June on the east bank of the river, nearly opposite Alexievka; it was situated on a dry tussocky ridge intersecting the dead flat boggy moor, and was a mere hollow, evidently scratched, perfectly round, somewhat deep, and containing a handful of broken slender twigs and reindeer-moss, upon which lay four eggs. The female was shot from this, and from many other nests, and by the 12th July ten identified clutches of eggs had been secured: those on the last day containing live chicks which were hatched out in a basket filled with Bean-Goose down. The eggs when fresh are described as "intermediate in colour between those of the Golden Plover and the Peewit, and subject to variation, some being much browner and others more olive, none quite as green as typical Peewit's eggs, or as orange as typical ones of the Golden Plover; but the blotching is in every respect the same, the underlying spots equally indistinct, the surface spots generally large, especially at the larger end, but occasionally very small and scattered." In size they vary from 1·8 by 1·35 to 2·02 by 1·4 in.

The young in down, obtained as above mentioned, are very yellow, spotted with black; colours which harmonize with the yellow-green moss on the edges of the little bogs close to which the nests are placed. The ground-colour appears to lack the orange tint noticeable in the down of the young of the Golden Plover. The alarm note is a plaintive *köp;* there is a double call-note, *Klee-eep,* and sometimes these appear to be combined. When on our coasts it may be rendered by *Tl-e-ih* in a much sharper key than the note of the Golden Plover. The food of the Grey Plover consists of worms, marine insects, marsh shells, green sea-weed, and the maggots of the sea-weed fly. For the table it is hardly so much esteemed at present as when Dr. Muffett (temp. Elizabeth) wrote—"The gray Plover is so highly esteemed that this Proverb is raised of a curious and male-contented stomack; *A gray Plover cannot please him.* Yet to some the green [Golden] Plover seemeth more nourishing, and to others the Lapwing, which indeed is savory and light of digestion, but nothing comparable to Plovers."

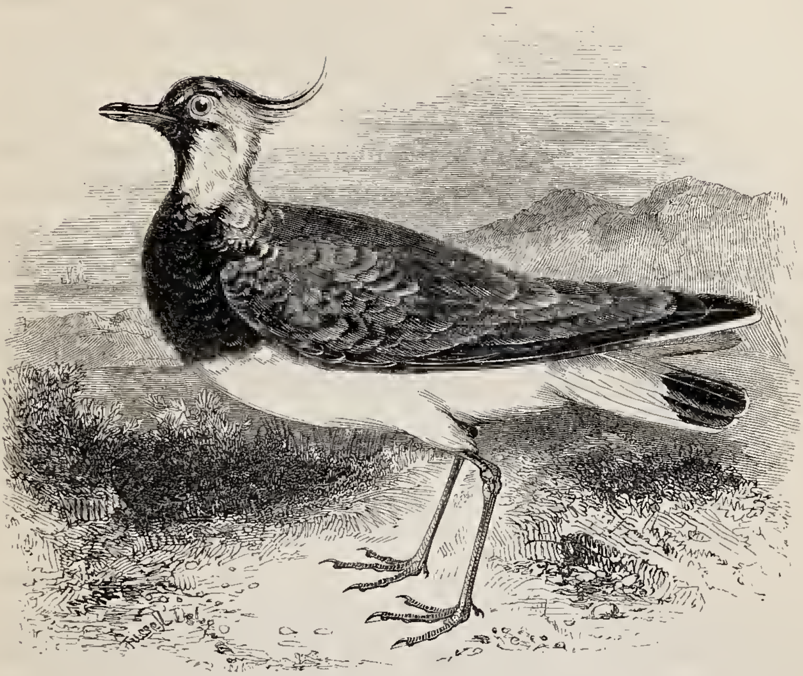
The adult bird in summer plumage has the beak black; the irides very dark brown; the forehead and top of the head white, the latter slightly speckled with greyish-black; nape of the neck a mixture of dusky grey and white; the whole of the back, scapulars, wing-coverts, tertials, rump, and upper tail-coverts, black and white, the base of each feather being black, the ends white; the wing-primaries greyish-black, the shafts white; tail-feathers white, with numerous greyish-black transverse bars; the chin, cheeks, throat, sides of the neck, breast, and belly, black; vent and under tail-coverts white; axillary plume elongated and black at all ages and seasons; under wing-coverts white; legs, toes, and claws dark slate.

The whole length is twelve inches. From the carpal joint to the end of the wing seven inches and five-eighths; the first quill-feather three-eighths of an inch longer than the second, and the longest in the wing.

In winter the feathers on the upper surface of the body are dusky grey, edged with dull white; the throat, breast, and sides, lighter in colour than the back, the feathers but slightly streaked with dusky grey; the belly, vent, and under tail-coverts, dull white, with few or no marks.

In spring the black feathers begin to appear on the breast, and the birds may be observed in various degrees of change from white, with only a few black feathers, to entire and perfect black. The breeding-plumage is generally complete by the end of May.

Young birds of the year in autumn are much spotted with yellow, giving them a strong superficial resemblance to the Golden Plover.



VANELLUS VULGARIS, Bechstein*.

THE LAPWING, OR PEEWIT.

Vanellus cristatus.

VANELLUS, *Brisson*†.—Bill shorter than the head, straight, slightly compressed; the points of both mandibles horny and hard. Nasal groove wide, and reaching as far as the horny tip. Nostrils basal, linear, pierced in the membrane of the nasal groove. Legs slender, with the lower part of the tibiæ naked. Tarsi reticulated behind, scutellated in front. Feet four-toed; three before, one behind, the anterior ones united at the base by a membrane; hind toe very short, articulated upon the tarsus. Wings large, tuberculated or spurred in front of the carpal joint; the first and second quill-feathers shorter than the third and fourth, which are about equal, and the longest in the wing.

THE LAPWING, or PEEWIT, is one of the best known among our native birds; the first name being suggested by its peculiar

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[*] Ornithologisches Taschenbuch, ii. p. 313 (1803).

[†] Ornithologie, v. p. 94 (1760). The name was formerly spelt *Vannellus*, as the diminutive of *vannus*, a fan. See Charleton, 'Exercitationes,' p. 113 (1677).

mode of flight,—a slow flapping of its rounded wings; the second name having reference to the frequently-repeated note of the bird, which the sound of the word *peewèet* closely resembles. The French, in imitation of the sound of its note, call this bird *dix-huit.* This species, like the rest of the Plovers, inhabits marshy ground near lakes and rivers, wild heaths and commons, or the hills of an open unenclosed country. In such localities it is often very numerous, and during the months of April and May its eggs are sought after as a luxury for the table in all the districts where the birds are common. The earliest eggs fetch such fancy prices as fifteen shillings *apiece:* and a leading West-End poulterer recently informed the Editor that if he were assured of having the first ten eggs he would not hesitate to give £5 for them. As the supply increases, the value falls rapidly, until it reaches 4*s.* 6*d.* per dozen, which is the average London price in the season. Pennant in 1776 quoted them at three shillings, and Daniel in 1812 at four shillings a dozen, so that, considering the relative value of money, the price is now lower than it was a century ago. The marshes of Lincolnshire, Norfolk, Cambridgeshire, Essex, and Kent, afford some portion of the quantity with which the London market is supplied; but the Continent furnishes the larger part. Selby says, "The trade of collecting them continues for about two months; and great expertness in the discovery of the nests is shown by those accustomed to it; generally judging of their situation by the conduct of the female birds, who invariably, upon being disturbed, run from the eggs, and then fly near to the ground for a short distance, without uttering any alarm cry. The males, on the contrary, are very clamorous, and fly round the intruder, endeavouring, by various instinctive arts, to divert his attention." On this subject, also, J. D. Salmon observed, "So expert have some men become, that they will not only walk straight towards a nest, which may be at a considerable distance, but tell the probable number of eggs it may contain, previous to inspection; generally judging of the situation and number of eggs by the conduct of the female bird." In some counties, however, all the most likely ground is carefully searched for eggs, once every day, by women and children, without any reference to the actions of the birds. The male bird generally scratches out several shallow holes, in one of which the female deposits her four pear-shaped eggs, adding a few dried bents as incubation proceeds. The eggs are typically of an olive-coloured ground, blotched and spotted nearly all over with blackish-brown, but a pale stone-coloured ground with minute spots is not uncommon: they measure about 1·6 by 1·3 in. The usual number is four, but occasionally five have been found; in a clutch of this number found by Major E. A. Butler, close to Lough Larne, on the 22nd April, 1883, all five were fresh and so similar in their appearance as to render it probable that they were the produce of the same bird. The young, when hatched, are covered with a yellowish fawn-coloured down, mixed and spotted with brownish-black, with a light-coloured collar round the neck and a broad pectoral band. They soon follow the parent birds, who lead them to the softer parts of the soil, where food is more abundantly obtained. They feed on earth-worms, slugs, and insects in their various stages; and from their services in this way, Lapwings are frequently kept in gardens, and become very interesting pets. Latham says, "I have seen this bird approach a worm-cast, turn it aside, and after walking two or three times about it, by way of giving motion to the ground, the worm come out, and the watchful bird, seizing hold of it, draw it forth. The habit of the Lapwing, of flying and screaming over the head of any one who happens to go near their eggs or young, has been productive of very opposite feelings towards them. Charles Anderson, Esq., of Lea, near Gainsborough, to whom the Author was indebted for many notes on the Birds of Lincolnshire, sent him word that a very ancient Lincolnshire family, the Tyrwhitts, bear three Peewits for their arms*; and it is said, from a tradition, that it was in consequence of the founder of their family, Sir Hercules Tyrwhitt, having fallen in a skirmish, wounded, and being saved by his followers, who were directed to the spot where he lay by the cries of these birds, and their hovering over him. The notice, however, so frequently given by these birds was sometimes productive of very different consequences. Mr. Chatto, in his agreeable Rambles in Northumberland and the Scottish Border, refers to "the persecution to which the Covenanters were exposed in the reign of Charles the Second and his bigoted successor;" and, quoting Dr. Leyden, alludes to the tradition that "they were frequently discovered to their pursuers by the flight and screaming of the Lapwing; in consequence of which the Lapwing is still regarded as an unlucky bird in the south of Scotland."

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* The arms are *gules*, three Peewits *or*.

In the autumn they collect in flocks, and from that time till the end of winter are excellent birds for the table. For this purpose they were formerly 'mewed' (Fosbrooke, Ency. Antiq. ii. p. 1028), and fattened upon liver, as appears by an entry in the Household Book of Squire Kitson, of Hengrave, Suffolk—printed in Gage's History of Hengrave, p. 102:—"1574, July. For iij livers for the puets and the other mewed fowls vjd." In the Northumberland Household Book 'Wypes' (Scandinavian *Wipa*) are charged one penny each. It is probable that the 'Egrets' (French *Aigrette*, a tuft or crest), to the number of one thousand, stated by Leland to have been served at the often-mentioned feast on the enthronization of Archbishop Nevill, belonged to this species. A French proverb even goes so far as to say—

> "Qui n'a mangé grive ni vanneau
> N'a jamais mangé bon morceau;"

but the Lapwing is not equal to the Golden Plover.

The Peewit is common and resident throughout the British Islands; only a partial migration southwards being observable in severe weather. Owing to enclosure of waste lands, drainage and unrestricted egging, its numbers have considerably decreased of late years during the breeding-season in the eastern counties of England; but immense flocks come over from the Continent in the autumn, and the spread of cultivation in Scotland seems rather to have favoured its increase, especially in Shetland, where it was formerly a rare bird. In Ireland it is very abundant, but Sir R. Payne-Gallwey states that the eggs are not appreciated or collected there as they are in England. The birds, however, are netted in large numbers, and he gives an interesting account of the mode of making and setting the net as practised in that country, remarking upon the superior wariness of the Lapwing, which takes alarm far sooner than the Golden Plover.*

A rare straggler to Greenland, and only a visitor to the milder districts of Iceland, and to the Færoes, the Lapwing occurs in Europe up to the vicinity of the Arctic circle. In Norway and Southern Sweden it becomes tolerably abundant, although about Jædren, Mr. Collett says that it has decreased of late, owing to over-robbery : three to four thousand eggs having been shipped in a year from Egersund. From Northern Russia, and the cold provinces of the Baltic, the Lapwing migrates southwards in winter, but throughout the temperate portions of the Continent it is resident, breeding in suitable localities down to the extreme south of Spain. The majority of the eggs sent to this country in spring come from Holland and North Germany, where they are systematically gathered up to a fixed date, after which their taking is prohibited by law. The Lapwing is a winter visitor to the Azores, Madeira, the Canaries, and Northern Africa, a limited number remaining to breed in Morocco, Algeria, and Egypt; it is abundant in Asia Minor and Palestine during winter, and its range may be traced along the Euphrates valley, and Persia, to Northern India. Severtzoff states that in Turkestan it breeds up to an elevation of 10,500 feet, and it reaches across the temperate portions of Siberia to Mongolia, China, and Japan.

The adult in breeding-plumage has the beak black; the irides hazel; forehead, crown, and occiput, black, forming a cap or hood, which ends behind in a tuft of six or seven elongated, slender feathers, slightly curved upwards, which the bird can elevate or depress at pleasure; behind the eye, on the cheeks and sides of the neck, and reaching to the nape beneath the plume, white, speckled with black; an oblique streak of black below the eye; back, scapulars, wing-coverts, and tertials green, glossed with purple and copper-colour; the primaries black, the first three in each wing greyish-white at the end; upper tail-coverts reddish-chestnut; the basal half of the tail-feathers white, the rest black, the proportion of white greater in the two or three outer feathers, the extreme outside feather almost entirely white; chin, throat, and upper part of the breast shining black; lower part of the breast, belly, and vent, white; under tail-coverts fawn-colour; legs and toes dull flesh-colour; claws black.

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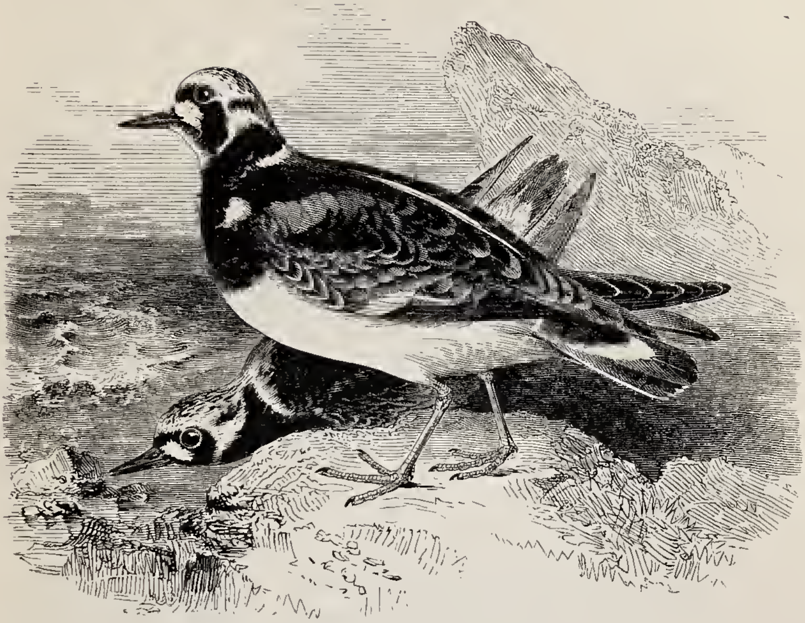
* The Fowler in Ireland, pp. 183–197.

In winter the chin and throat are white, the change to the black of the breeding-season occurring in April. The sexes in plumage resemble each other, but the female has the shorter occipital plume. The whole length is a little more than twelve inches. From the carpal joint to the end of the wing nine inches.

In young birds of the year the dorsal feathers are edged with buff.

White, cream-coloured, and mouse-coloured varieties of the Peewit have occasionally been obtained.



STREPSILAS INTERPRES (Linnæus*).

THE TURNSTONE.

Strepsilas interpres.

STREPSILAS, *Illiger* †.—Beak as short as the head, strong, thick at the base, tapering gradually to the point, forming an elongated cone ; upper mandible the longer, rather blunt at the end. Nostrils basal, lateral, linear, pervious, partly covered by a membrane. Wings long, pointed, the first quill-feather the longest. Feet four-toed, three in front, one behind ; the anterior toes united by a membrane at the base, and furnished with narrow rudimentary interdigital membranes ; hind toe articulated upon the tarsus, and just reaching the ground.

THE name of Turnstone has long been applied to this species from the method adopted by these birds of searching for food by turning over small stones with their strong beaks to get at the marine insects that lurk under them.

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* *Tringa Interpres,* Linnæus, Syst. Nat. Ed. 12, i. p. 248 (1766).

† Prodromus Syst. Mamm. et Av. p. 263 (1811).

The habit is not more singular than the species, which belongs to a genus containing only one other member, and is remarkable for the beauty and variety of its plumage. It inhabits the sea-shore, and at times visits the margins of lakes and large rivers, occasionally associating with some of the smaller Plovers, and feeds on the smaller crustacea, and the soft-bodied animals inhabiting thin shells, turning over stones, and searching among sea-weed for its food: whence its appropriate Norfolk name of 'Tangle-picker'. It is observed to dwell longer in one place, if not disturbed, than the Plovers, and utters a loud twittering note when on the wing.

By the latter part of July young birds make their appearance, but the bulk of the migrants from the north do not arrive until August. On the east coasts of England comparatively few remain after the autumn, but on the southern coasts, and especially in the mild climate of the west, many stay throughout the winter. By the middle of May the return migration has begun, and birds in breeding-plumage have frequently been observed on our coasts, sometimes in pairs, all through the summer; nevertheless the breeding of this species in the British Islands, although several times suspected, does not appear to be as yet fully proved. On the 28th May, 1861, a pair rose from a most suitable locality at Lundy Island, and the male unfortunately fell to a hasty shot from the Editor's companion. Mr. T. E. Buckley has seen the bird on the west coast of Harris in July, and believes that it breeds there; the late Dr. Saxby saw a Turnstone on Unst, the most northern of the Shetlands, on 16th June, and found three eggs which he supposed to belong to it, and in July, 1879, the Editor saw a pair on an islet in the same neighbourhood; but as yet no authenticated eggs seem to be known from any part of the United Kingdom.* In Scotland the species is more abundant than in England, and the same may be said of Ireland, especially the deeply indented and sea-weed covered coast of the west.

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* Mr. Harting has one of the eggs stated in Gould's 'Birds of Great Britain' to have been taken on the Farne Islands, and attributed to this bird; but, in the Editor's opinion, it resembles the egg of the Purple Sandpiper more than that of the Turnstone, and Mr. Hancock is not cognisant of either species having bred there.

This cosmopolitan species breeds in Greenland and in Iceland, and is supposed to do so in the Færoes; but its best known and most accessible breeding-haunts are on the coasts and islands of Scandinavia. It has occurred on Spitsbergen and in Novaya Zemlya, and appears to be found in summer along the northern coast of both European and Asiatic Siberia as far as Behring's Straits. On migration, it is found on all the coasts and islands of Europe, and has been obtained in such inland districts as Savoy, Bohemia, and Central Russia; it crosses the great Asiatic ranges on its way from Siberia to India, where a small number winter; it occurs in Japan, and it visits the coast of China during the cold season. Southwards it is found ranging throughout Malaysia, down to the south of Australia, Tasmania, and New Zealand; it has occurred in many of the islands of Polynesia; and along the west coast of South America from the Straits of Magellan to Mexico. Between the latter and Alaska this species is represented by *Strepsilas melanocephalus,* in which the dark plumage is unrelieved by russet. On the east coast of America it is found from the Arctic regions in summer, to the Antilles and Guiana in winter; in the Atlantic islands; and down both coasts of Africa, and on the great inland lake Nyassa; also in Madagascar. It would, indeed, be easier to say where it has not occurred. In the Azores, Mr. Godman shot examples in breeding-plumage at Flores in June, and believes that the species breeds there; and Dr. Bolle is of the same opinion with regard to some of the Canary Islands: Mr. Layard also thinks that it breeds near Cape Town, but as yet no eggs are known to have been obtained in the Old World south of the shores of the Baltic.

The late Mr. Hewitson has given the following description of his experiences when on the coast of Norway:—

"We had visited numerous islands with little encouragement, and were about to land upon a flat rock, bare except where here and there grew tufts of grass, or stunted juniper clinging to its surface, when our attention was attracted by the singular cry of a Turnstone, which, in its eager watch, had seen our approach, and perched itself upon an eminence of the rock, assuring us, by its querulous, oft-repeated note, and anxious motions, that its nest was there. We remained in the boat a short time, until we had watched it behind a tuft of grass, near which, after a minute search, we succeeded in finding the nest in a situation in which I should never have expected to meet with a bird of this sort breeding; it was placed against a ledge of the rock, and consisted of nothing more than the dropping leaves of the juniper bush, under a creeping branch of which the eggs, four in number, were snugly concealed, and admirably sheltered from the many storms by which these bleak and exposed rocks are visited, allowing just sufficient room for the bird to cover them. We afterwards found several more nests with little difficulty. All the nests contained four eggs each. The time of breeding is about the middle of June." The eggs measure 1·6 by 1·1 in., of a greenish-grey colour, spotted and streaked with ash-blue and two shades of brown.

The Turnstone is well known to the ornithologists of the United States; and interesting accounts of its habits will be found in the works of Wilson and Audubon: the latter says, "My worthy friend, Dr. Bachman, once had a bird of this species alive. It had recovered from a slight wound in the wing, when he presented it to a lady, who fed it on boiled rice, and bread soaked in milk, of both of which it was very fond. It continued in a state of captivity upwards of a year, but was at last killed by accident. It had become perfectly gentle, would eat from the hand of its kind mistress, frequently bathed in a basin placed near it for the purpose, and never attempted to escape, although left quite at liberty to do so."

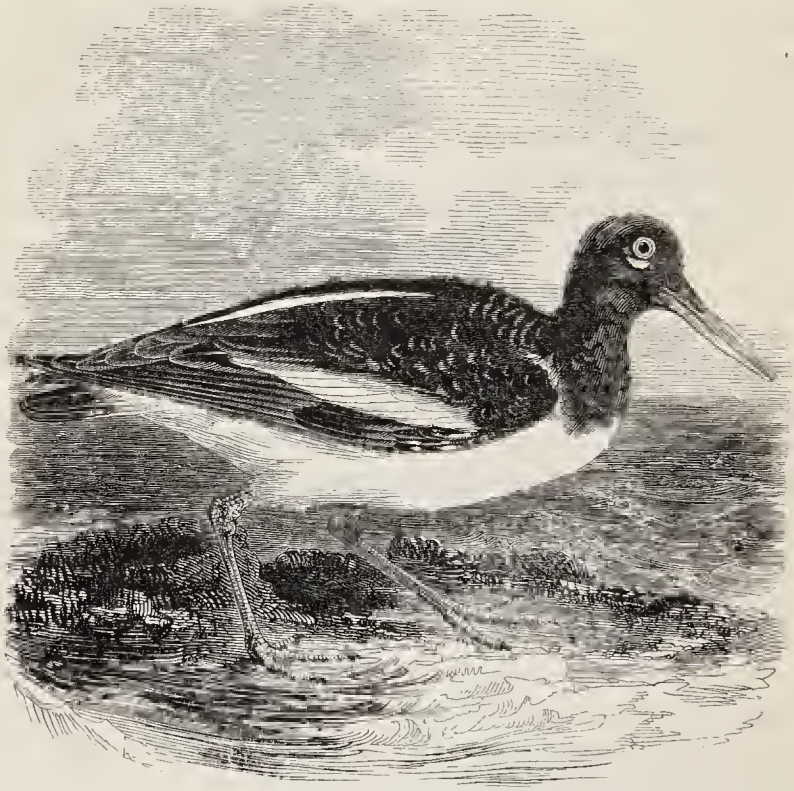
The adult bird in summer has the beak black, with a fleshy sheath at the base of the upper mandible; the irides dark brown; the forehead black, reaching to the eye on each side; below the eye a black patch, which, curving forward and upward, goes to the base of the lower mandible, encircling a white spot at the base of the upper mandible; top of the head, the occiput, and back of the neck, white, streaked with black; sides of the neck and the scapulars rich black; interscapulars, and smaller wing-coverts, dark red; greater wing-coverts black, edged with red; wing-primaries greyish-black, with pure white shafts; tertials nearly black, tipped and spotted with red; the back white; rump with a transverse band of black; upper tail-coverts and the base of the tail-feathers white, the other part greyish-black: all, except the two middle ones, tipped with white; chin white; sides of the neck, the throat, and upper part of the breast, rich black; lower part of the breast, belly, vent, under tail-coverts, under surface of the wing, and the axillary plume, pure white; legs and toes rich orange-red; claws black; the hind toe articulated on the inner surface of the tarsus, and directed inwards towards the other leg, not backwards as in most other birds.

The whole length of the bird is nine inches and a half. From the carpal joint to the end of the wing, six inches; the first quill-feather a little longer than the second, and the longest in the wing.

The sexes do not differ much in plumage; but in winter the ferruginous portions of the plumage are not so rich in colour, and the legs and feet are much paler.

In young birds of the year the whole of the plumage of the upper surface of the body, and round the throat in front, is dull brownish-black; the feathers of the body edged with yellowish-white; those of the wing-coverts and tertials edged with reddish buff-colour; the chin, breast, belly, and under tail-coverts, white; the legs and toes pale orange, almost flesh-colour.

The young in down is dark grey above, spotted with black, a narrow black band from the crown to the forehead, and another from the gape to the eye; the underparts merging from greyish to white.



HÆMATOPUS OSTRALEGUS, Linnæus.*

THE OYSTER-CATCHER,

OR SEA-PIE.

Hæmatopus ostralegus.

HÆMATOPUS, *Linnæus* †.—Beak longer than the head, straight, strong, the point much compressed, forming a wedge ; culmen of the anterior part slightly convex ; upper mandible with a broad lateral groove, extending one-half the length of the bill ; mandibles nearly equal in size and length, with the thin ends truncated. Nostrils basal, lateral, linear, pierced in the membrane of the mandibular groove. Legs of moderate length, naked for a short space above the tarsal joint ; tarsi strong. Feet with three toes only, all directed forward, united at their base by a membrane; claws strong, broad, not very much pointed.

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* *Hæmatopus Ostralegus*, Linnæus, Syst. Nat. Ed. 12, i. p. 257 (1766).

† *loc. cit.*

The Oyster-Catcher is well known on the shores of Great Britain and Ireland. It appears to prefer sandy bays and wide inlets bounded with banks of shingle, as favourable localities for the production of the various mollusca upon which it principally subsists. The vertical edge of its truncated, wedge-like beak, seems admirably adapted for insertion between the two portions of a bivalve shell, and limpets are detached from the surface of a rock with ease; after which the animal is scooped out as if with a knife. Its food consists of the mollusca generally, worms, and marine insects. The Oyster-catcher is a handsome bird when seen on the wing, from the well-marked contrast and the purity of the black and white colours of its plumage: whence its name Sea-Pie; an equally appropriate name is that of 'Mussel-Picker,' and in Sussex it is known as the 'Olive.' It runs with rapidity, and may frequently be observed to swim short distances when searching for its food, and wounded birds have been known to dive.

Although principally found on or near the coast, it is a mistake to suppose that the Oyster-catcher does not straggle inland, for examples have been killed even in the Midland Counties. In Scotland many pairs breed on the Don, the Tay, the Spey, the Findhorn, and on some inland lochs twenty or thirty miles from the sea.

The eggs are deposited above high-water mark on the shingly beach, or on the narrow ledges of rocky islets, or, again, amongst the sand-hills: they are frequently laid on a pavement of small fragments of shells, or on a tussock of sea-pink. Mr. C. M. Adamson says that he once found them in a meadow at some distance from the sea; Mr. Collett mentions a clutch laid in a cavity on the top of a felled pine-tree near the Trondhjems fiord; and the Editor has found them occupying the previously-robbed nest of a Herring-Gull. Their number is usually three, and on the rare occasions where the Editor has found four, three of them invariably exhibited a family likeness, whilst the fourth was different. They are of a yellowish stone-colour, spotted and scrolled with ash-grey and dark brown; and measure about 2·2 by 1·5 in. The female sits about three weeks, during which the male keeps watch, and becomes clamorous on the approach of an enemy; his mate attends to the signal, leaves her nest in silence, and after a circuitous flight, joins him in his endeavours to scold or decoy away the intruder. On the rocky coasts where suitable localities are scarce, each pair possesses a certain district, but on sandy flat shores, such as those of Lincolnshire and Lancashire, considerable numbers may be found associated; and on some of the Shetland islands, when the young are just hatched, the chatter of the thirty or forty pairs of birds is perfectly deafening.

In autumn the birds which have bred in the north pass southwards, and a certain influx of visitors from the Continent takes place, so that large flocks, generally very wary, may be seen from that time onwards along the coasts. As an article of food the Oyster-catcher can hardly be eulogized, and although we find in the Northumberland Household Book—" Item, See-Pyes for my Lorde at Princypall Feestes and non other tyme," yet the L'Estranges of Hunstanton had either better taste, or a greater choice of food, for the Sea-Pie is only mentioned once in their Accounts, and then at a low price.

The Oyster-catcher is a rare straggler to Greenland, but in Iceland it is not uncommon in summer, and is believed to remain throughout the year in the southern districts. It occurs in summer on all the coasts of Europe from the North Cape to the White Sea, and, southward, to the Mediterranean: being resident, as a rule, from the Baltic to the delta of the Rhone and the shores of the Adriatic. Along the Spanish Peninsula and the islands and shores of the greater part of the Mediterranean it is principally known as a migrant, and it is only on comparatively rare occasions that it is found traversing the inland portions of the Continent, except where, as in Russia, it follows the course of large rivers. It retreats in winter from the northern shores of the Black Sea and the Caspian, on which it breeds in summer, as also, to a limited extent, on the salt lakes of the Aral; and thence it seems to stretch north-eastward across Siberia, where Dr. Finsch found it at Obdorsk, close to the Arctic Circle. Beyond this there is a break in its distribution, and the bird found by Shrenck on the Ussuri, a tributary of the Amoor, and also on the latter river, and at Narim, in Eastern Siberia, belongs, according to Taczanowski, to the somewhat larger, longer-billed form, with less white on the primaries, found in China, to which Swinhoe gave the name of *H. osculans*. This form is probably the one obtained by Middendorf in the Sea of Okotsk, and by Pallas in Kamtschatka and on the Kurile Islands, and which is supposed to occur in Japan, as it certainly does in China down to Swatow, breeding in Talien Bay. In New Zealand and Australia, reaching up to Arracan, China, and Japan, is found *H. longirostris*, which has a very long bill, and no white on the primaries. In India our Oyster-catcher does not seem to have occurred to the east of Burma, and both on the mainland and in Ceylon it is mainly a winter visitant; on the coast of Baluchistan and in the Persian Gulf it is not uncommon; and Severtzoff states that it migrates through the Pamir range. It is found during the cool season along the coast of North Africa from Morocco to Egypt, and can be traced down the Red Sea, where Von Heuglin thinks it is resident, to Mozambique on the east side; whilst on the west coast of Africa it is recorded from Senegambia.

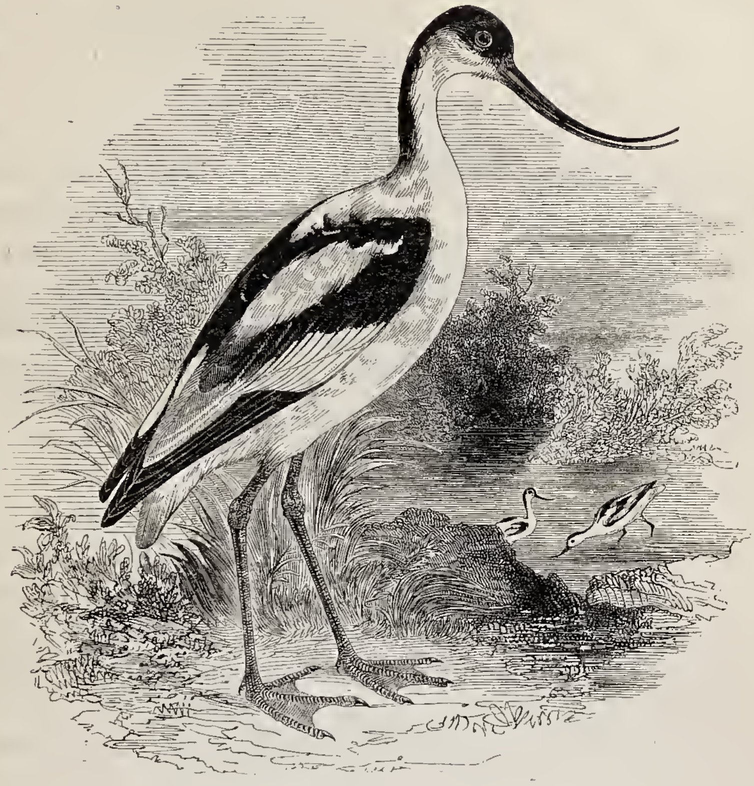
The beak is three inches long, of a deep orange at the base, lighter in colour towards the tip, greatly compressed, and ending in a thin vertical edge; the irides crimson; the eyelid reddish-orange, with a white spot below the eye; the whole of the head, the neck all round, the upper part of the breast, scapulars, interscapulars, smaller wing-coverts, quill-feathers, and the distal half of the tail-feathers, black; the back, great wing-coverts, part of the inner web of the primaries, upper tail-coverts, the basal half of the tail-feathers, the lower part of the breast, all the under surface of the body, under surface of the wings, and the axillary plume, pure white: the greater coverts forming a white bar on the wing; the legs and toes purplish flesh-colour; the claws black.

The whole length is rather more than sixteen inches. From the carpal joint to the end of the wing, nine inches and three-quarters: the first quill-feather about half an inch longer than the second, and the longest in the wing.

In the winter half-year, adult birds have a white gorget round the front and sides of the neck. This mark is assumed in August, and borne through the winter, and over a great portion of the spring. At this season the bill becomes horn-coloured towards the tip.

Young birds of the year have the feathers of the back and wings margined with brown, and some of them show but little white on the throat during the first winter.

In the downy nestling the upper parts are dark grey, tinged with buff; the head broadly mottled with black, the throat sooty; a broad line of black down each side of the back, and a broken line from the wings to the rump; under-parts white.



Recurvirostra avocetta, Linnæus[*].

THE AVOCET.

Recurvirostra avocetta.

Recurvirostra, *Linnæus*[†].—Beak very long, slender, weak, depressed throughout its whole length, flexible, pointed, and curving upwards; the upper mandible grooved along the upper surface; under mandible grooved along the side. Nostrils on the upper surface of the beak, near its base, linear, long. Legs slender, long, great portion of the tibia naked; three toes in front, hind toe small, articulated high up on the tarsus, the anterior toes united as far as the second articulation, by a membrane, the margin of which is concave. Wings pointed; the first quill-feather the longest in the wing.

The Avocet is certainly a singular-looking bird, especially in reference to its beak, which is curved upwards, and is slender, pointed, and flexible, having very much the appearance of a thin piece of elastic whalebone. The semipalmated feet are well adapted for supporting the bird on the soft mud which it frequents; but it is a mistake to suppose that the Avocet cannot swim with ease, when the occasion requires, and it frequently wades into the water up to its belly. Messrs. Sheppard and Whitear say, in their Catalogue of Norfolk and Suffolk Birds, respecting one which they saw in the breeding-season of 1816 on the marshes of Winterton, and which had young,—"This bird made several circles round us, uttering a shrill note, and then alighted in the middle of a pool of water, on which it floated; then took several turns on wing, and again alighted on the water, where it sat motionless."

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[*] *Recurvirostra Avocetta*, Linnæus, Syst. Nat. Ed. 12, i. p. 256 (1766).

[†] *loc. cit.*

The Avocet was formerly a regular visitor to our shores, and bred in considerable numbers in suitable localities. Sir Thomas Browne, in 1668, describes it as "a shoeing horn or barker, from the figure of the bill and barking note; a long made bird of white and blackish colour; fin footed; a marsh bird; and not rare some times of the year in Marshland." Up to the beginning of the present century the bird was still abundant in several localities on the east coast of England, and in Gough's edition (1806) of Camden's 'Britannia,' enlarged by the addition of notes from Pennant and others, is a statement (ii. p. 271) that "opposite Fosdyke Wash [Lincolnshire] during summer are vast numbers of Avosettas, called there *Yelpers*, from their cry as they hover over the sportsman's head like Lapwings." Mr. Hugh Reid, of Doncaster, informed Mr. A. G. More, in a letter dated June 1st, 1861, that so recently as about twenty years prior to that date an Avocet's eggs were taken at the mouth of the Trent, where that river divides Yorkshire from Lincolnshire. Drainage of the marshes, and persecution by gunners and egg-gatherers, did their work in the favourite haunts of this conspicuous species, both in Lincolnshire and in Norfolk, and the occurrence in the year 1816 at Winterton, was probably the last date of the breeding of the Avocet in that locality. At Horsey, as Mr.

Rising informed Mr. Stevenson (B. of Norfolk, ii. p. 238), Avocets continued to breed until 1819, and perhaps a year or two later; and at Salthouse, where they were known as "Clinkers," they do not appear to have become extinct until 1822 to 1825. Since that period they have occurred at irregular intervals, mostly in May and June, and occasionally in autumn; but any hope of the re-establishment of the species as a breeder has been promptly frustrated by the gun of the local collector; the value of a British-killed specimen being far greater than the amount of any fine imposed on conviction under the Wild Birds' Preservation Act. In Suffolk it used to breed near Aldborough.

Romney Marsh, in Kent, was also a breeding-place of the Avocet in former years; and Markwick, in his Catalogue of the Birds of Sussex, printed in 1795, says, "This bird is not uncommon on our sea-coast in summer; but whether it is to be found here in winter I cannot tell, as I do not recollect to have ever seen it at that season. That it breeds here I have been an eye-witness, for I remember that several years ago, I found in the marshes near Rye a young one of this species, which appeared to have been just hatched, and I took it up in my hands, whilst the old birds kept flying round me. I have also seen it in the summer on the sea-coast at Bexhill." Since that date the species has passed into the category of visitants to that county, and Mr. A. E. Knox says it is of rare occurrence there, sometimes in small flocks, but generally alone.

The Avocet has been noticed several times in Cornwall, Devonshire, Dorsetshire, Gloucestershire, Shropshire, and some other counties, becoming rarer towards the north. Mr. Cordeaux informs the Editor that he has only seen it once on the Humber flats since 1872. It has occurred two or three times at Teesmouth; once at Hartley in Durham; and, in Scotland, in Aberdeen and Fifeshire. It has also been obtained at Stornoway, in the island of Lewis; in the Orkneys; and once, by Dr. Saxby, at Uyea Sound, Shetland, on the 4th March, 1871.

In Ireland, according to Thompson, it is a very rare visitor. The late B. S. Ball, of Youghal, stated that he shot one near that town; three were observed on the marshy coast of Wexford, and one was obtained near Castletown; two were shot in Cork Harbour in January, 1848, in which month one was seen on the Dublin coast by the late R. J. Montgomery; and more recently, as recorded by Mr. R. Warren (Zool. 1877, p. 288) one was shot on the estuary of the Moy by Captain Dover.

On the coasts of Norway and Sweden the Avocet can only be considered a straggler, but it still breeds in diminishing numbers in certain localities in Denmark, on the southern shores of the Baltic, in the Frisian Islands, and on the coast of Holland: arriving in April and departing in September. To Belgium, and the north of France, it appears to be an irregular visitant, but in the Camargue it breeds; and, although a local species, it is now known to be common in the breeding-season in the marshy districts of the south of the Spanish Peninsula. On migration it has occurred, although rarely, in Switzerland and the interior of Germany, and it visits the coasts and islands of the Mediterranean with regularity, a limited number being resident there.

In North Africa it appears to be generally distributed in suitable localities, and it occurs along the east and west coasts, and, more rarely, in the interior of that continent, down to Damara Land and Cape Colony, in both of which it has been stated to breed. Hartlaub records it from Madagascar. Returning to the Palæarctic region, the Avocet is found breeding on the shores of the Black Sea and the Caspian; in Turkestan; in Siberia as far north as Dauria; and in Mongolia; and it visits the coast of China down to Formosa and Hainan in winter. From Asia Minor it can be traced through Persia to India, and on the inland waters of the latter it is sometimes abundant in the winter and early spring; it also straggles to Ceylon.

In addition to our Avocet, the genus comprises three other species: *Recurvirostra americana*, which has a sandy-red head and nape in summer, and is found from Hudson's Bay down to Guatemala; the remarkable *R. andina*, with white head and black tail, restricted, apparently, to the high lakes (16,000 feet) in the Andes; and *R. novæ-hollandiæ*, of Australia and New Zealand, which has the head, throat, and chest of a deep chestnut-red.*

The eggs, which are laid in a slight hollow scratched in the bare ground, with little or no lining,† are generally deposited in the month of May, and are, as a rule, three or four in number; five have been found, probably the united produce of two females. In colour they are clay-buff, blotched and spotted with black, and measure about 2 in. by 1·5 in. Naumann says that incubation, in which both sexes take part, lasts seventeen or eighteen days. It has been suggested by Mr. Harting (Ibis, 1874, p. 248) that Avocets feed their nestlings as Puffins do, by bringing food *crosswise* in their bills, and laying the latter close alongside the open mandibles of the young, allowing them to snatch the food *sideways.*

The food of the Avocet consists of worms, aquatic insects, and the thinner-skinned crustaceous animals, which these birds search for on soft mud and sand. The peculiar marks made by the singular form of the beaks of these birds in the sand while searching for food with the convex side, are recognizable, while their stooping mode of action, and the character of the beak itself, have induced the provincial names of Scooper and Cobbler's-awl Duck. The usual note is a clear *kuitt.*

The specimen from which the figure and description here inserted were taken, was obtained in the London market in the spring of 1814. The beak, black, about three inches and a half in length, has very much the appearance of two thin flat pieces of whalebone coming to a point and curving upwards; the irides reddish-brown; top of the head, occiput, nape, and back of the neck, black; interscapulars and upper part of the back, white; scapulars, lesser wing-coverts, and the wing-primaries, black; all the other parts of the plumage pure white; legs and toes pale blue.

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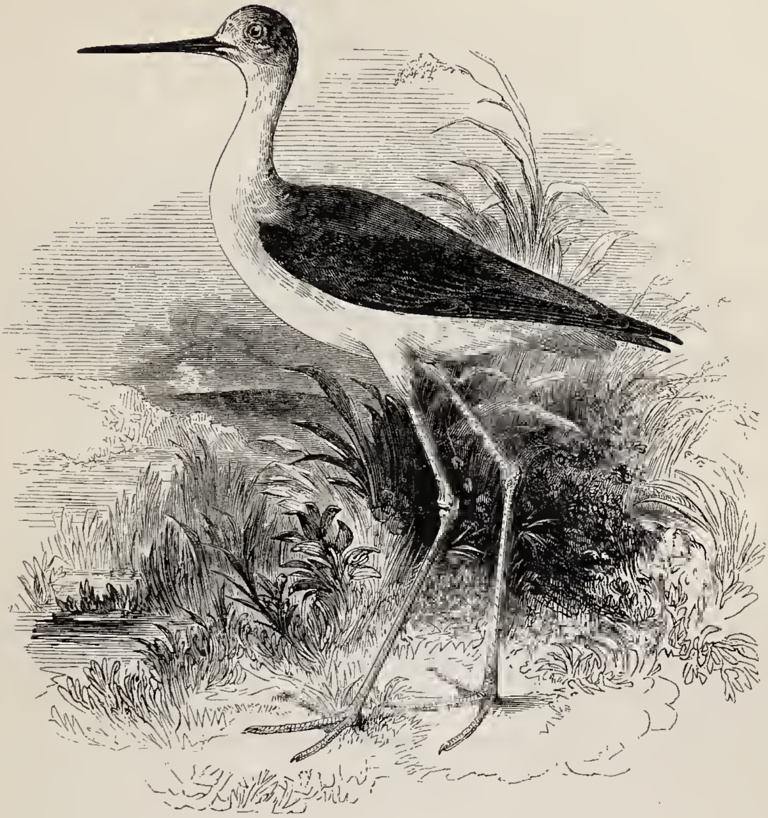
* For an interesting monograph of this genus, see J. E. Harting, 'The Ibis,' 1874, pp. 242–261.

† Dr. Cullen says that he found nests of this species at Kustendje which were built up of straws and stems to the height of six or eight inches; and he goes on to state that the downy nestling has the bill quite straight; but this is an error, for in specimens only a day or two old the bills are distinctly curved. The Black-winged Stilt, however, also breeds at Kustendje, and was recently (June, 1883) found there by Messrs. Seebohm and Young, with nests raised as described; and in this latter species the bill of the nestling is, naturally, straight. It seems, therefore, possible that there may have been a mistake in the identification of the nest-building species.

The whole length is nearly eighteen inches. From the carpal joint to the end of the wing, eight inches and a half; the first quill-feather the longest in the wing.

In young birds of the year the dark-coloured parts of the plumage are tinged with brown; the scapulars edged with reddish-brown, and the tail-feathers are brownish. During the second year, till the autumn moult, some of the elongated dark feathers are still reddish-brown at the end.

The young in down are of a greyish-white, variegated with brownish-grey on the crown, back and sides, an irregular line of blackish spots down the middle of the rump, and a well-defined blackish line on each side from the wings to the rump terminating in a black tuft; the bill black, and distinctly curved; a black streak leading from the base to the eye, and beyond it; legs and toes greenish-blue.



HIMANTOPUS CANDIDUS, Bonnaterre*.

BLACK-WINGED STILT.

Himantopus melanopterus.

HIMANTOPUS, *Brisson*†.—Beak long, slender, slightly recurved at the tip, cylindrical, flattened at the base, compressed at the point, both mandibles grooved on the sides along the basal half of their length. Nostrils lateral, linear, elongated. Legs very long and slender, three toes in front, the middle toe united to the outer toe by a membrane of considerable size, and to the interior toe by a membrane of smaller size; claws or nails very small, flat. Wings very long, the first quill-feather considerably the longest in the wing.

THE BLACK-WINGED STILT was first recorded as a visitor to these islands by Sir Robert Sibbald,‡ who describes and figures under the name of *Himantopus* one of two specimens shot at a lake near the town of Dumfries, and sent to him by William Dalmahoy. The statement by Don in his account of Forfarshire (1812), that it had been seen in such unlikely localities as the mountains of Clova, and on Ben Lawers in August, 1793, may be open to doubt; but it occurred near Glasgow in 1850; and again in 1867, in which year it is also said to have been seen near Aberdeen, and Sir William Jardine recorded an example shot that October in Dumfriesshire. Baikie and Heddle mention two examples in Orkney in 1841, and Saxby says that one was observed in Shetland prior to 1843.

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* Tableau Encycloped. et Méthod., i. p. 24 (1790).

† Ornithologie, v. p. 33 (1760).

‡ Scotia Illustrata, II., p. 18, pls. xi. fig. 1, and xiii. fig. 2 (1684).

Passing southwards, the occurrences of the Black-winged Stilt become more numerous. White of Selborne notices five that were killed out of a flock of six, that visited Frinsham Pond, a large piece of water lying between Wolmer Forest and the town of Farnham, during the last week of April, 1779; one was shot at the same place in 1832 (Zool. p. 5041); and Mr. William Borrer sent word to the Author that an adult had been shot near Havant. It has occurred once in Cornwall, several times in Devon, and once near Poole in Dorsetshire. In Sussex one was observed at Bosham in December, 1855, and, again, at Trotton on the 17th May, 1859, respecting which a remarkably interesting account is given by Mr. A. E. Knox (Ibis, 1859, p. 395). Mr. Harting records (Hbk. Brit. Birds, p. 136) a specimen killed at Faversham, in the Canterbury Museum. Pennant mentions one that was obtained near Oxford, and another appears to have occurred near Henley (Zool. p. 2601). On the 30th January, 1848, a straggler was obtained as far inland as Perlethorpe, Nottinghamshire*; one was obtained near Thornbury, in Gloucestershire,† and Montagu, in his Supplement, notices one that was killed in the Isle of Anglesea.

Of some specimens killed in Norfolk, the Rev. Richard Lubbock sent to the Author the following account: "On the ninth of June, 1822, I was returning in the evening from fishing upon Hickling Broad, when a bird of this species flew past the boat within thirty yards. The legs were extended behind, even more in proportion than those of a Heron; the wings were much arched; the flight vigorous and regular; the colour and the length of limb made me guess what it must be. I asked the fen-man who was with me what *he* guessed it to be. He considered it a Ruff which had been caught, as is sometimes the case in our marshes, by a horse-hair snare, and had broken away with it. When I told him that I believed it to be a very rare and valuable bird, he wished to go in immediate pursuit; but I overruled that, as there was not more than half an hour's light remaining, and the bird, if shot at ineffectually, might leave the country in the night. We searched for it early the next morning, and found it precisely in the same place as the evening before. When shot, it was standing in a shallow pool of water, mid-leg deep, apparently snapping at insects in the air as they buzzed round it. Since then a pair was shot by Mr. Salmon, at Stoke Ferry, in the spring of 1826; the female had eggs within her in a forward state; one of these last was in the collection of the late Mr. Lombe."

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* Sterland, Birds of Sherwood Forest, p. 194.

† Dillwyn, Fauna of Swansea, p. 8.

About eight other examples have occurred in that county, and having been recorded in detail by Mr. Stevenson it is unnecessary to say more than that with one exception they were all obtained in May, June, and July, whereas several of those above mentioned visited England in winter. The Black-winged Stilt has also occurred in Suffolk, and, probably, in some other counties not specially enumerated; and the Author's specimen from which the figure and description here given were derived, was obtained in the London market in July, 1824, and was sent up for sale from Lincolnshire. In the intestines of a Norfolk bird killed about the same time, was a species of tape-worm, six inches in length, broad, flat, and jointed. Mr. W. E. Clarke says that two were obtained near Beverley, in Yorkshire, many years ago.

In Ireland Thompson says that one was seen by the late

Robert Ball, near Youghal, in the winter of 1823; one was shot near Lough Mask, County Mayo, in 1836, and one at Clontarf, Dublin Bay, prior to 1837.

Denmark, to which it is a rare visitant, appears to be the northern limit of the Black-winged Stilt on the Continent; and throughout Holland and Northern Germany it can only be looked upon as a straggler, although its eggs are said to have once been taken in Anhalt. It is also believed to have nested once near Abbeville, in the north of France, but although well known as a migrant, it is only in the south of that country, especially in the marshes of the Rhone, that it is found breeding regularly. In the marshy plains of the Spanish Peninsula it is abundant, especially in the breeding-season, and eastward it may be found in suitable localities along both sides of the Mediterranean to Asia Minor. In the marshes of the Lower Danube and on the shores of the Black Sea it is also common. From the Canary Islands it can be traced down the west coast of Africa to Cape Colony, and as it is known to visit Madagascar, it probably occurs on the south-eastern coast of Africa. Through Persia and Turkestan its range extends to India and Ceylon, where it breeds; to the Philippine Islands, and to China, where, however, it has only rarely been observed.

Its note is a clear *pee, pee, pee*, and its food consists of gnats, flies, beetles, and aquatic insects, in pursuit of which it wades up to the knees in shallow water. The eggs, which are usually four in number, of a rich buffy stone-colour, spotted and blotched with blackish-brown, measuring about 1·7 by 1·25 in., are laid early in May in Spain and North Africa; in June on the Black Sea, and, as a rule, in the latter month in India. They are generally placed on a slight lining of bents, in a tuft of grass, close to, and almost in, the water, so that they are frequently coated with mud; but Messrs. Seebohm and Young observed that on the marshes of the Black Sea, the nests were built up to the height of several inches. The latter has furnished the Editor with the following details:—"The nests were placed on the mud, generally from three to six feet from the edge of the water; one was in the shallow water at least six feet from land, another was among some two or three reeds which grew in the water. The nests were built of small reeds, and were from two to four inches high—about six inches in diameter at the top, increasing to eight at the base—the slight hollow containing the eggs being lined with finer reeds. Six nests had four eggs each, one nest had one egg, and one or two were empty. All the nests were within a space of one hundred yards. A thick belt of reeds bordered the lake (which was separated from the Black Sea by a narrow ridge of sand), leaving a few feet of black stinking mud between them and the water; it was on this bare space that the nests were placed: one clutch of eggs was considerably incubated, the others were nearly fresh."

Mr. Hume relates a similar habit as observed at some salt works about five-and-thirty miles south of Delhi, where the Black-winged Stilt breeds in hundreds, and forms its nest of small pieces of the broken lime lining of the salt-pans, collected into a circular platform from five to seven inches in diameter, and from two to three in height, on the top of which a little dry grass is placed (Ibis, 1870, p. 146).

The adult male has the beak black; the irides red; the whole of the head, the neck all round, the breast, and under parts white, with an evanescent rosy tint; tail-feathers greyish-white; a few dusky streaks behind the eyes and on the occiput; the back and wings nearly black, tinged with green; the legs and toes pink.

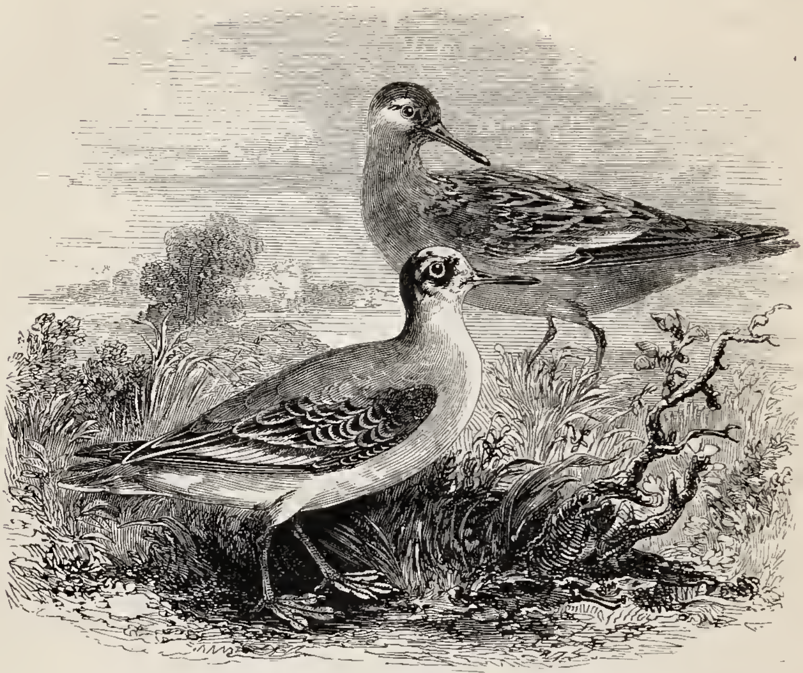
The length of the body is about thirteen inches. From the carpal joint to the end of the wing, eight inches; the first quill-feather the longest.

In the females the back is brownish, and not tinged with green.

Young birds have the feathers of the back and wings brown, edged with white, and more dark feathers about the back of the head; the legs orange.

In the nestling the down of the upper parts is buffish-grey, mottled with black; the under parts dull white.

SCOLOPACIDÆ.



Phalaropus fulicarius (Linnæus*).

THE GREY PHALAROPE.

Phalaropus lobatus.

Phalaropus, *Brisson*†.—Beak rather long, weak, straight, depressed, and blunt; both mandibles grooved throughout their whole length; the upper mandible slightly curved at the point. Nostrils basal, lateral, oval, with an elevated margin. Legs rather short, slender, tarsus compressed; three toes in front, one behind; the anterior toes furnished with an extension of the membrane laterally, forming lobes slightly serrated at the edges, the hind toe small, and articulated on the inner side of the tarsus. Wings long, pointed; the first quill-feather the longest.

This pretty species, remarkable for the great difference of its red appearance when in the plumage of summer, compared to its delicate grey colour in winter, and from which latter prevailing tint it derives its name, was formerly considered a rare bird in this country, since Pennant says that he only knew of two instances in which it had occurred in his time. It is now known to be of more common, although of very irregular occurrence, generally appearing in the autumn, when on the way to southern winter quarters; and the visitors are, for the most part, young birds of the year, in various stages of change towards the pure and delicate grey colour of the plumage of winter. Some years since, A. B. Lambert, Esq., presented to the Zoological Society a beautifully-marked adult bird, which was killed in Wiltshire in the month of August, and retained at that time a great portion of the true red colours of the breeding-season, or summer plumage; but specimens obtained in December, January, and February, then exhibit, of course, the perfect grey plumage of winter.

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* *Tringa fulicaria*, Linnæus, Syst. Nat. Ed. 12, i. p. 249 (1766).

† Ornithologie, vi. p. 12 (1760). The name originated in the resemblance of the dilated and lobed membranes of the toes to those in the Coot—*φάλᾶρις* a Coot, and *ποὺς* foot; a structural resemblance which was probably a reason for placing the Phalaropes next to the Rails in former Editions.

This species has now been obtained in so many different counties in the British Islands, as to render the particular enumeration of them unnecessary, but it may be said that it is not of frequent occurrence in Ireland, nor on the west coast of Scotland. On the eastern side of the latter, its irregular visits take place in larger numbers, and the same remark applies to both the eastern and the western sides of England, but the more favoured counties are those of the south-east, south, and, in a less degree, the south-west. Mr. J. H. Gurney, jun., has published an interesting pamphlet summarizing the occurrences of this species during the great immigration which took place between the 20th August and 8th October, 1866, when, according to his estimate, upwards of five hundred were slaughtered, and of these about two hundred and fifty were obtained in Sussex; very few touching the coast to the north of Ramsgate. Some were killed far inland, although generally by the side of lakes or ponds; and even on the coast, the favourite localities appear to be pools of fresh or brackish water, sheltered from the turbulent sea. Another immigration of some importance which took place in the autumn of 1869, was almost confined to the south coast. In most instances these beautiful and harmless birds have shown a confidence and want of fear which might have touched the heart of any one except a collector; it was sometimes difficult to avoid blowing them to pieces, and one bird was actually struck down by a labouring man with a spade.

The breeding haunts of the Grey Phalarope appear to be circumpolar. On Parry's first and second Arctic voyages, it was observed to be abundant during the summer months on the North Georgian and Melville Islands, and found breeding at Iglookik, and Melville Peninsula, on the third voyage; and on the Arctic Expedition of 1875-76, Major Feilden observed a pair apparently breeding in July in 82° 30′ N. lat. Its breeding range extends across to Alaska, but the majority of the eggs which have been sent to collectors of late years come from the district of Upernavik and Egedesminde in Greenland. Its eggs have also been obtained in Iceland and in Spitsbergen; it probably nests in Novaya Zemlya; Middendorff found both eggs and half-fledged young in Northern Siberia; and the "Vega" expedition obtained it close to Behring's Straits in June. In Scandinavia it only occurs on migration, with the exception of the southern fiords of Norway, where some winter; and in Northern Russia, the Baltic, in Northern Germany and Belgium, it has seldom been noticed. Its appearances on the French coast are more frequent, and, by the depressions of the Rhine and Rhone valleys, it skirts Switzerland and straggles to Italy and the Mediterranean. Single specimens have been observed or obtained at Santander, Lisbon, and near Cadiz; also at Tangier in Morocco, in January, by the late Tyrwhitt-Drake; M. Alléon records it from the Black Sea; and a few have been obtained inland in Bohemia. It does not seem to migrate by way of the Volga valley, and Severtzoff records it as a rare visitant to the Pamir range. Mr. Hume found it in flocks of about twenty in the Gulf of Oman, and from thence to Bombay, but these individuals, presumably the survivors of the persecution in the north, were by this time extremely wary. A solitary example, still in winter plumage, was obtained by the late E. Blyth, on the 11th of May, 1846, in the Calcutta bazaar; but there seems to be no record of its occurrence further east; nor is it at all easy to say what becomes of the birds annually bred in the north, or what lines they take on their migrations to winter quarters. In America, it has been traced as far as New Jersey on the east side, and to California on the west.

The nest is a mere depression in the peat, in which four eggs are usually laid. These are of a stone-colour, tinged with olive, spotted and speckled over with dark brown, especially at the larger end; and measure about 1·15 by ·85 in., being very similar to those of the Red-necked Phalarope, next in order; but, as a rule, they are slightly broader and blunter in shape. An egg which was in the Author's collection, and is figured in Mr. Hewitson's work, was brought from Melville Island, and also the female bird in summer plumage, from which the figure in the background of the illustration was drawn and engraved. The Danish collectors in Greenland say that the present species generally breeds on small islands, whereas its congener prefers the mainland.

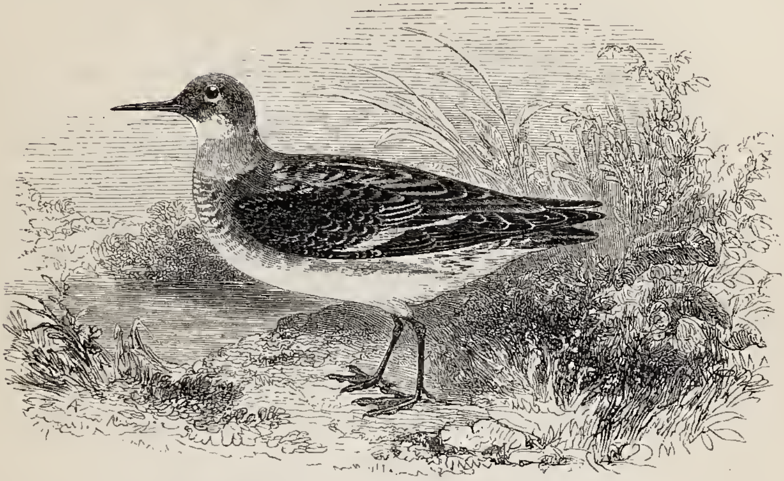
Grey Phalaropes feed on the smaller thin-skinned crustacea and aquatic insects, which they search for and pick up from the surface of the water while swimming; and their attitude resembles that of the Gull, with the head drawn backwards. Such decided swimmers are the Phalaropes, that Sabine mentions having shot one out of a flock of four, on the west coast of Greenland in latitude 68°, while they were swimming in the sea amongst icebergs, three or four miles from the shore; and Richardson, in his Natural History Appendix to Parry's second Arctic voyage, says, they were observed upon the sea, out of sight of land, preferring to swim out of danger rather than take wing.

The females of this species appear to assume more perfect colours, in the breeding-season, and to retain them longer than the males. A female in fine summer plumage has the beak yellow, the point dark brown; around the base of the beak, and on the top of the head, dark brownish-black; irides dark brown; around the eye a patch of white; a narrow stripe down the back of the neck; all the back and rump nearly black, with pale yellow margins; lesser wing-coverts lead-grey, edged with white; greater wing-coverts and secondaries lead-grey, with broad ends of white; tertials also lead-grey, margined with orange-yellow; quill and tail-feathers almost black; the front and sides of the neck, the breast, and all the under surface of the body uniform reddish-chestnut, or bay; under surface of tail-feathers ash-grey; legs, toes, and their lobed membranes yellow; the claws black.

When changing in autumn to the plumage of winter, the bay under-colour is lost by degrees; the first grey feathers that appear are the scapulars, and from thence down the sides of the back; afterwards those of the interscapular space, and the centre of the back below; the orange-coloured margins of the tertials becoming paler.

In winter the beak becomes black, more than halfway from the tip; around its base, and on the top of the head, white; irides dark brown; around the eye dusky black; a patch of the same colour on the ear-coverts and on the occiput; back of the neck, scapulars, upper wing-coverts, and all the back, uniform pearl-grey; greater coverts, secondaries, and tertials, lead-grey, margined with white; primaries as in summer; tail-feathers ash-grey, margined with white; chin, neck in front, breast, and all the under surface cf the body pure white, except a small patch of pearl-grey before the point of the wings, but not extending round the front; legs, toes, and membranes yellowish; the claws black.

Specimens vary considerably in size; the females are the largest, and measure about eight inches and a quarter in their whole length; the males usually half an inch less; from the carpal joint to the end of the wing four inches and three-quarters.



PHALAROPUS HYPERBOREUS (Linnæus*).

THE RED-NECKED PHALAROPE.

Phalaropus hyperboreus.

THE RED-NECKED PHALAROPE is at once distinguished from the Grey Phalarope last described, by its smaller size, with a longer and more slender beak, and it presents much less seasonal variation in its plumage.† It is both more irregular, and less abundant on its visits, which are principally in the autumn, and rarely on the spring migration. It has been observed in Sussex and Surrey; in Norfolk and Suffolk, according to Mr. Stevenson, only about twenty times in as many years; in the Humber district seldom, the latest record being that of three in the autumn of 1881 (Rep. Migr. Com. 1882, p. 32); and also on the Yorkshire coast; and very rarely in Northumberland. Sometimes its erratic course takes it inland, and on the 6th July, 1843, an

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[*] *Tringa hyperborea*, Linnæus, Syst. Nat. Ed. 12, i. p. 249 (1766).

[†] Owing to the shape of its bill, it has been made the type of a genus, *Lobipes*, in association with the only other member of the group, *L. wilsoni*, and the latter again has been given a genus, *Steganopus*, to itself.

example in the collection of Mr. J. Whitaker, of Rainworth Lodge, near Mansfield, was killed at Ramsdale, Notts. Its rare visits can be traced along the east coast of Scotland from Berwick to the extreme north, and irregularly along the western side; but in Ireland, strange to say, it has not as yet been recorded. Yet although so scarce on migration, it is said to breed in a few scattered localities in the counties of Perth and Inverness; and also, on what Mr. Harvie-Brown considers very insufficient evidence, in Sutherlandshire. In the Hebrides, especially on the Long Island, as well as in North and South Uist, a variable number of pairs annually rear their broods; as some formerly did in the Orkney group, until nearly, if not quite extirpated by the greed of the collector; and in Shetland a few still find a refuge which it would be undesirable to betray.

The late J. D. Salmon, who visited Orkney in the summer of 1831, says of the Red-necked Phalarope: "This beautiful little bird appeared to be very tame; although we shot two pairs, those that were swimming about did not take the least notice of the report of the gun; and they seemed to be much attached to each other, for when one of them flew to a short distance, the other directly followed; and while I held a female that was wounded in my hand, its mate came and fluttered before my face. We were much gratified in watching the motions of these elegant little creatures, as they kept swimming about, and were for ever dipping their bills into the water; and so intent were they upon their occupation, that they did not take the least notice of us, although within a few yards of them. The female has not that brilliant bay colour upon the sides of the neck and breast, so conspicuous in the male.* After some little difficulty, we were fortunate in finding their nests, which were placed in small tufts of grass growing close to the edge of the loch; they were formed of dried grass, and were about the size of that of a Titlark, but much deeper. The eggs are considerably smaller than those of the Dunlin, and beautifully spotted all over with brown. They had but just commenced laying, June 13, as we found only from one to two eggs in each nest; but we were informed by a boy whom we engaged in our service, that they always lay four, and are called by the name of Half-web."

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* Mr. Salmon probably *assumed* that the duller-coloured bird was the female, for it is now well-known that in this, as in the preceding species, the female is both larger and more richly coloured than the male.

In the Hebrides, according to Mr. Harvie-Brown, they usually arrive in the latter part of May, and by August both old and young have taken their departure. The average measurement of eggs is 1·12 by ·8 in., the ground-colour olive blotched with umber-brown. The male takes a considerable share in the duties of incubation, and, as regards the behaviour of the female, the late W. Procter has contributed the following experiences obtained in Iceland:—"The young birds leave the nest as soon as hatched. On the approach of danger the old bird runs among the aquatic herbage, spreading her wings, and counterfeiting lameness, for the purpose of deluding the intruder; and after leading the enemy from her young, she takes wing and flies to a great height, at the same time displaying a peculiar action of the wings; then descending with great velocity, and making simultaneously a noise with her wings. On her return to her young, she uses a particular cry for the purpose of gathering the young together. As soon as she has collected them, she covers them with her wings like the domestic hen."

The food, as may be inferred from what has been already stated, consists of small crustacea, marine insects, aquatic larvæ, worms, &c. The note is a sharp *tirrr*.

The Red-necked Phalarope breeds in the Færoes, Iceland, and Northern Scandinavia, and can be traced in summer across Northern Russia to Archangel; thence, by way of Waigats, to 73° N. lat. on the Taimyr Peninsula, in Siberia, where, however, Middendorf found it less plentiful than the preceding species; he also found it nesting in the highest portion of the mountains of Bosuda Alamyta. It occurs along the northern coast line as far as Behring's Straits where it is very abundant. In the Baltic and along the coast of the German Ocean, it is a rare and irregular visitant, nor is it much more frequent on the coasts of France. It probably wanders to the Iberian Peninsula, as it has been obtained in North-Western Africa, but in Italy and other countries bordering the Mediterranean, it is of very rare occurrence. Stragglers to the inland waters of Austria and Hungary are on record, and a few individuals find their way to the Black Sea. It seems probable that an important line of migration is by the valley of the Volga, for Henke says (Ibis, 1882, p. 223) that it visits Astrachan, being especially numerous on the spring passage. Mr. Seebohm has a specimen in winter plumage from Samarcand, and Prof. Severtzoff obtained it on the autumn migration in the Pamir range. Mr. Blanford found it plentiful in winter in Persia, and examples have been obtained at Kurachee and at Madras. In occurs in Japan; is a regular double migrant to the coast of China, and has been known to visit Celebes, the Moluccas, the Aru Islands, and New Guinea.

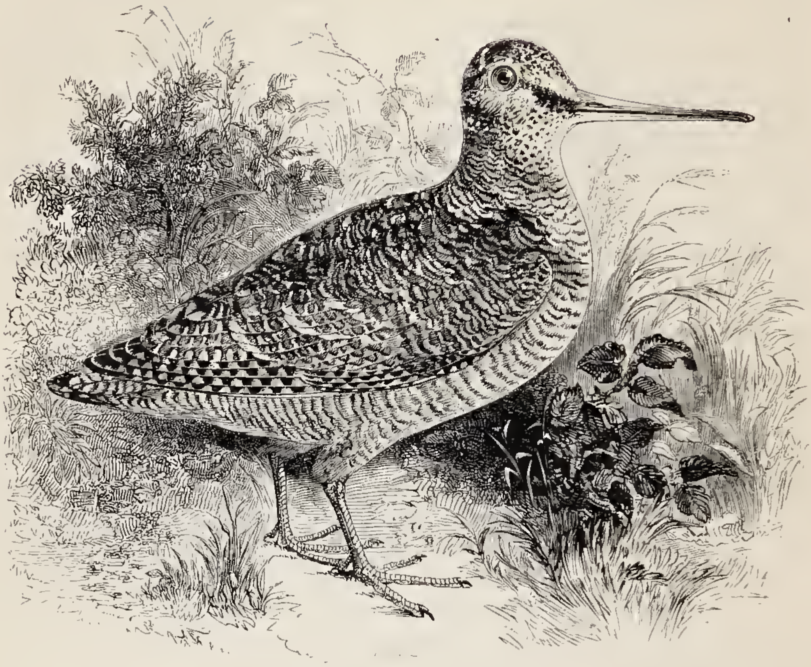
In Greenland it breeds abundantly, and ranges across North America, going as far north as Prince Albert's Land (Zool. 1879, p. 7), to Alaska, where it is very plentiful in summer; and it breeds in some of the mountain lakes, high up in the coast range. Inland it has been obtained in Kansas, at an elevation of 3,300 feet (Bull. Nuttall, 1883, p. 187), and in winter it has been found as far south as Chili on the Pacific, and the Bermudas in the Atlantic.

In summer the beak is black, longer and more slender than that of the Grey Phalarope; irides dark brown; around the base of the beak and the eyes, on the top of the head, back of the neck, all the back and the wing-coverts, nearly uniform dark lead-colour; the scapulars and tertials margined with reddish-yellow; primaries almost black; secondaries rather lighter in colour and tipped with white; upper tail-coverts dusky and white; tail-feathers brownish-grey, the middle pair the darkest in colour; chin pure white; sides and front of the neck rich yellowish-red; feathers of the lower part of the neck in front dark grey, edged with white; breast, belly, vent, and under tail-coverts, pure white; in front of the wing a patch of dark grey, which extends backwards, mixed with white over the sides and flanks. Legs, toes, and their membranes green, the claws black.

Females measure about seven inches in length, and are larger than males; from the carpal joint to the end of the longest quill-feather four inches and one-quarter. The length of the beak, from the feathers on the forehead, ten lines and a half.

Adult birds in winter have the forehead and the greater part of the crown white; the nape and the streak through the eye, sooty-brown; the dorsal feathers margined with white; sides of face and under parts nearly pure white. Young birds are similar, but the feathers of the upper parts are margined with rufous-buff, the feet are yellowish, and the toes are much less lobed.

LIMICOLÆ. *SCOLOPACIDÆ.*



Scolopax rusticula, Linnæus*.

THE WOODCOCK.

Scolopax rusticola.

Scolopax, *Brisson*†.—Beak long, straight, compressed, slender, soft, slightly curved at the point; both mandibles grooved over the basal half of their length; point of the upper mandible extending beyond that of the lower mandible, the curved part forming a slight crook; superior ridge elevated at the base, prominent. Nostrils lateral, basal, pierced longitudinally near the edges of the mandible, covered by a membrane. Legs rather short, tibia feathered nearly to joint; three toes before, one behind, the anterior toes almost entirely divided. Wings moderate, the first quill-feather the longest in the wing. Tail short, rounded.

Although the eggs or the young of the Woodcock have been found, during one summer or another, in almost every county in England, as well as in many of those of Scotland and Ireland, and also more frequently of late years than formerly, yet the great bulk of the species must be understood as only winter visitors, arriving early in October, or soon afterwards, and again departing northwards in March. The late Mr. Selby, one of our best observers, residing in the eastern part of Northumberland, and only four or five miles from the sea, says, "I have found that these birds always come over in the greatest bodies in hazy weather, with little wind, and that blowing from the north-east;* and it is probable that they then find the upper region of the atmosphere, in which they fly, freer from counter currents of air, than in more open weather. After a night of this description I have frequently met with great numbers upon the edges of plantations, in hedges, and even in turnip-fields, and enjoyed excellent sport for the day; but on seeking, on the following morning, for a renewal of similar success, I have not found a single bird, the whole flight having proceeded on their course during the intervening night. It is during this time that Woodcocks, like most migratory birds, perform their journeys: and it seems probable that those which halt upon the eastern coast of Scotland, and the northern counties of England, have completed their task from shore to shore, between sunset and sunrise, as they appear but little fatigued on their arrival, provided the weather has been calm. The distance of the coasts of Norway and Sweden, from whence these visitors are supposed to come, offers no objection to this supposition, as a continued flight of eight or ten hours, even at a rate inferior to what I conceive they are capable of accomplishing, would suffice for the transit. Another argument in favour of this supposition is, the high state of condition in which the birds generally arrive on our shores, especially at an advanced period of the season, by no means indicating the wasting effects of very long-continued exertions. It appears that they fly at a considerable altitude, as indeed most birds do when performing their migratory movements. A respectable person who lived upon the coast, and who, being a keen pursuer of wild-fowl, was in the habit of frequenting the sea-shore at an early hour in the morning, assured me that he had more than once noticed the arrival of a flight of Woodcocks coming from the north-east just at day-dawn. His notice was first attracted by a peculiar sound in the air over his head, that, upon attending to, he found proceeded from birds descending in a direction almost perpendicular; and which, upon approaching the shore, separated and flew towards the interior; these he pursued and shot, and which proved, as he surmised by the view he had of them as they flew past him, to be Woodcocks." Mr. Selby has also observed that "the first flights of these birds, which seldom remain longer than for a few days, and then pass southward, consist chiefly of females; whilst, on the contrary, the subsequent and latest flights which continue with us, are principally composed of males. It has been noticed by several authors, that the arrival of the males, in a number of our summer visitants, precedes that of the females by many days; a fact from which we might infer, that in such species a similar separation exists between the sexes during their æquatorial migration." The circumstance of the separation for a time of the males and females in the Woodcock or Wood-snipe, as it is sometimes called, accounts for the result which occurs at the early part of the Woodcock season. On making internal examination of twelve Woodcocks, from one locality, for the purpose of ascertaining the sex, for use in this work, only two of them proved to be males.

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* *Scolopax Rusticola,* Linnæus, Syst. Nat. Ed. 12, i. p. 243 (1766); for *rusticula: cf.* Pliny, Nat. Hist. cap. x. 54 (38).

† Ornithologie, v. p. 292 (1760).

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* Mr. N. F. Hele (Notes about Aldeburgh, p. 122) says of that part of Suffolk, that Woodcocks always appear with a north-*west* wind, and under no other circumstances; also that their flight is directly against the wind. But it by no means follows that the direction of the wind with which the birds drop on the land is the same as that prevailing at a greater elevation, and this should be taken into consideration in estimating all records of the arrival of migrants.

Mr. John Cordeaux, whose observations on the migration of birds are well known, informs the Editor that in the autumn of 1882 the "great flight" crossed on the night of October 12th, with strong east wind, fog and drizzling rain. On the morning of the 13th they were found in considerable numbers at all the chief stations for observing the migration of birds, from Orfordness in the south, to the Isle of May, at the entrance to the Firth of Forth. This flight covered 350 miles of the coast of Great Britain, and the birds probably travelled in parallel lines across the North Sea from the opposite coast of Europe. Casualties against the lanterns of lighthouses and light-vessels on the English coast generally occur between midnight and daybreak. The Woodcocks therefore probably leave the opposite coast in the dark of evening or early night.

Under the influence of a north-east wind, their course is probably between south and west; this will account for the number of Woodcocks found in Devonshire, Cornwall, in Wales, and in Ireland; the birds in many instances pursuing their course till they reach the sea, or returning, if possible, when they have overshot the land.

Gilbert White of Selborne says, in his Journal, "A gentleman writes word from St. Mary's, Scilly, that in the night between the 10th and 11th of October, the wind being west, there fell such a flight of Woodcocks within the walls of the garrison, that he himself shot, and conveyed home, twenty-six couple, besides three couple which he wounded, but did not give himself the trouble to retrieve. On the following day, the 12th, the wind continuing west, he found but few. This person further observes, that easterly and northerly winds only have usually been remarked as propitious in bringing Woodcocks to the Scilly Islands. So that he is totally at a loss to account for this western flight, unless they came from Ireland. As they took their departure in the night between the 11th and 12th, the wind still continuing west, he supposes they were gone to make a visit to the counties of Cornwall and Devonshire. From circumstances in the letter, it appears that the ground within the lines of the garrison abounds with furze. Some Woodcocks settled in the street of St. Mary's and ran into the houses and out-houses."*

Adverse gales may exercise an important influence in arresting their flight beyond the western shores of our islands, and possibly their instinct tells them that the deep blue waters of the Atlantic are of far wider extent than the paler waves of the North Sea and the Irish Channel. Whatever be the reason, it is undoubtedly a fact that Woodcocks often make their appearance on the south and west coasts of Ireland before they are noticed in the north and east.

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* Jesse's 'Gleanings in Nat. Hist.', 2nd Ser. p. 179.

The abundance or scarcity of the annual arrivals of Woodcocks depend very much upon the severity of the weather in the north of Europe. In 1852 an unusual number were shot at Melton Constable, near Holt, in Norfolk, thirty and thirty-three being respectively killed on two successive days in the first week in December, and ninety-three on the following day by the same shooting party, who might, if other game had been disregarded, have killed at least 110 (A. Newton, Zool. p. 3754). In this case it seems probable that the abundance was local, and due to the inundations of that year, which had expelled the birds from the low grounds. Severe frost in England has the effect of driving the birds from the east to the milder coasts of the west, and to Ireland, which has always been celebrated for its 'cock-shooting. Daniel, in his 'Rural Sports,' has stated that in that island the (late) Earl of Clermont shot fifty couple in one day; and his successor informs the Editor that this feat was the result of a wager. It took place at the Earl of Farnham's seat in Cavan; the entire bag being made in a large wood called Donaweale, and before two o'clock in the afternoon, with a single-barrelled flint-gun. Of all years within the memory of man in Ireland, none, however, equals the winter of 1881, when, according to Sir R. Payne-Gallwey, the peasants bagged their fifteen and twenty couple a day, and would have killed many more but for running short of ammunition. In Clare one dealer alone, although he had two rivals in the trade, forwarded to Dublin and London a thousand Cock a week for three weeks; and the books of the principal firm of Tralee show that in January and February 1,641 were received from Kerry. One shooter near Kilcredan, county

Clare, killed thirty couple in a day; and on Lord Ardilaun's property at Ashford, county Galway, 173 Cock fell to six guns in two days.*

A Woodcock when flushed on the coast has been known to settle on the sea, and when again disturbed, rose without difficulty and flew away. But this is not always the case. Mr. Falconer, of Christchurch, has recorded (Zool. 1848, p. 2023), "that some years ago, a few miles from the Land's End, the sea was strewed with hundreds of Woodcocks: it is probable that they were exhausted by their long flight, and hundreds seem to have fallen together into the sea; some of them were taken up, and found to be perfectly fresh." Numerous instances are recorded of Woodcocks alighting on the deck of ships in the English Channel and elsewhere. The rapidity of flight of this bird is at times so great that a pane of plate-glass more than three-eighths of an inch thick has been smashed by the contact, and one was actually impaled on the weathercock of one of the churches in Ipswich (Zool. ss. p. 271).

The return migration takes place in March, at which season the birds, although generally paired, were formerly shot in this country, until protected by law after the 1st of that month. Owing to the increase of plantations, especially of fir-covers in the vicinity of cultivated ground, the number of birds which now remain to breed very largely exceeds that of former years, when every nest of a Woodcock was a novelty to be recorded. Those counties which possess large and undisturbed woods are naturally among the most favoured, but even Middlesex must not be omitted from the list, for the nest has been found in Caen Wood; whilst on the Surrey side of the river it has been noticed so near to the metropolis as Streatham. In the eastern division of Sussex, according to Mr. T. Monk, of Lewes, whose carefully collected statistics were published in 'The Field,' 25th February, 1871, there were annually, on an average, from 150 to 200 nests a year. Its distribution throughout the breeding-season is tolerably general in Scotland, especially in the more wooded districts, but the absence of cover forms no insuperable bar, for Saxby knew it to breed annually on the hill-side at Hermanness, the most northern point of the most northern of the Shetland Islands. In Ireland a similar increase has taken place since Thompson in 1843 called attention to the nidification of this bird from the year 1835 onwards in the woods of Tullamore Park, county Down. Lord Clermont writes that at Ravensdale Park, on the borders of Louth and Armagh, and in the neighbouring Narrow-water Woods, county Down, above twenty nests are sometimes found in a season by the keepers when looking for pheasants' eggs, and the birds are frequently seen flying to and from their feeding-places.

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* 'The Fowler in Ireland,' pp. 218–230.

Woodcocks are very early breeders, and the date of March 1st, the commencement of close-time, is not at all too early for their protection. St. John, in his 'Wild Sports in the Highlands' (p. 220), states that he had three eggs brought to him on 9th March, 1846, and a nearly full-grown young one in the second week of April, 1844. In 1836, Mr. Blyth saw two young Woodcocks on the 20th of April. On the 22nd of April, 1838, Mr. Gould exhibited at the Zoological Society two young Woodcocks, apparently three weeks old; and the Author had in his collection a young Woodcock five or six weeks old, which he bought on the 23rd of April, 1822, in the market at Orleans. The average time for the commencement of incubation may, however, be taken as the end of March and beginning of April. The nest is little more than a hollow in the dry oak or fern-leaves, in some warm sheltered situation, but without any attempt at concealment in the undergrowth, and the eggs, usually four in number, are but slightly pyriform, of a pale yellowish-white: the larger end blotched and spotted with ash-grey and two shades of reddish-yellow brown; they measure about 1·75 by 1·3 in.

Few subjects have been more discussed than that of the manner in which the Woodcock carries its young. Scopoli, writing in 1769, says, "*pullos rostro portat fugiens ab hoste*," upon which Gilbert White remarks that "the long unwieldy bill of the Woodcock is perhaps the worst adapted of any among the winged creation for such a feat of natural affection." It is now well known that Scopoli was mistaken as to the young being carried *in* or *by* the *bill*, but it will be seen that there is evidence that the bill is not without employment in the act. A number of observers have stated that the chick is carried in the claws. Descriptions of this mode of conveyance will be found in the late Mr. Lloyd's 'Field Sports of the North of Europe' and other works. The most detailed account is, however, that given by the brothers Stuart in the notes to 'Lays of the Deer Forest,' vol. ii. p. 259, from which the following is extracted:—"Various times when the hounds, in beating the ground, have come upon a brood, we have seen the old bird rise with a young one in her claws, and carry it fifty or a hundred yards away; and if followed to the place where she pitched, she has repeated the transportation until too much harassed. One morning, while sitting on a grey stone, I saw a dark eye which was fixed upon mine from the bed of dead leaves before me, when suddenly the little brown head of a young Woodcock peeped out from the feathers of the old one's breast, uttering that plaintive cry for which language has no sign. There were two more young Woodcocks, and to relieve the anxiety of the *madre*, I left her. Near the place where I found her, there was a soft green stripe, such as Woodcocks love. I had no doubt that the family would be there next day; and, as I passed near, I turned aside to see what they were doing. Upon a dry bank, half way down the brae, I almost stumbled over a bird which rose at my feet; and as it darted through the trees, I saw that it had something in its claws, and, at the same time, I heard the plaintive cry of little Woodcocks just under my feet. I looked down, there were two; and I thought a hawk had carried off the third, and, perhaps, killed the mother. This, however, I found, on following the bird, was the old Woodcock, which being flushed again suddenly, after a low flight of only a few yards, dropped what it was carrying, her own young Woodcock. I gave her a little time to find him, which was not difficult, as he called to her as loud as his tiny bill could pipe. In a few moments I ran forward, and she rose with him *in her feet*, her long legs dangling and swinging with her little burden like a parachute. I left her to pursue her flight in peace, and went on my way; but I have no doubt she went back for the other two, for several times afterwards I saw them all together in the soft green 'glac.'"

The late Mr. St. John was at one time under the belief that the young bird was carried in the feet, and stated so in his 'Field Notes and Tour in Sutherlandshire,' ii. p. 164, but experiences at Dunrobin, in 1849, in company with Mr. John Hancock,* convinced both these observers that the young bird was clasped between the thighs and pressed close up to the body of the parent; and this view was subsequently put forth in his 'Natural History and Sport in Moray,' p. 210. An article by Mr. J. E. Harting (Zool. 1879, pp. 433-440), with an illustration after Wolf of the young bird dangling in the feet of the parent "like a parachute," revived the interest on the subject; and Mr. R. J. Ussher and Mr. R. E. Reeves contributed statements (Zool. 1882, pp. 306, 307), showing that, according to the personal experience of the latter, and that of other observers, the Woodcock supported her young not only with her feet, but *also with her bill pressed over the chick against her breast*; confirming the assertion of a Rostrever correspondent, that a Woodcock "had a young one pressed between its breast and feet" (Zool. 1879, p. 439). Without denying the accuracy of former observations, the latter position appears to be supported by the evidence of the larger number of witnesses.

The Woodcock is a nocturnal bird, seeking its repose by day, remaining quietly hid in the dry grassy bottoms of brakes and woods, seldom or never moving unless disturbed. Sir Humphry Davy, in his Salmonia, says, "A laurel, or a holly bush is a favourite place for their repose: the thick and varnished leaves of these trees prevent the radiation of heat from the soil, and they are less affected by the refrigerating influence of a clear sky, so that they afford a warm seat for the Woodcock." Certain localities seem to have a peculiar charm for it, and if the original occupier be shot, a new tenant is almost certain to be found there. So close do they lie that but for the black glittering eye they might often be passed unobserved ; and Mr. Gould records an instance of a bird being seen to alight and half cover itself with dead leaves before the beaters came up, nor did it attempt to rise until flushed by a dog.

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* Nat. Hist. Trans. Northumb. and Durham, vi. p. 104.

Towards night it sallies forth, whirling and twisting in a manner very different from its usual owl-like flight by day, pursuing a well-known track through the cover to its feeding-ground. These tracks or open glades in woods, are sometimes called cockshoots and cock-roads, and it is in these places that nets, called road-nets, were formerly suspended for their capture, but the gun is now the more common means of obtaining them. A few are still caught with nooses of horse-hair, set up about the springs or soft ground where the birds leave the marks of the perforations, or borings made with their beaks. Common earth-worms appear to be the food most eagerly sought after. Montagu and other ornithologists have borne testimony to the almost incredible quantity of earth-worms which a single Woodcock, in confinement, has been known to consume in one night ; and Mr. Edmond Crawshay informed Mr. Hancock that a man was kept constantly employed during the day in obtaining the supply necessary for a brood of three of these birds. Mr. F. Norgate, who took home a slightly winged Woodcock, and observed its habits, assured Mr. Stevenson that the flexibility of the upper mandible of the bill was go great that it more resembled the writhings of a worm than a beak, and this voluntary upward movement, added to the exquisite sense of touch possessed by the anterior portion of the beak, assists the bird in obtaining its food. Sir R. Payne-Gallwey states that he has observed that Woodcocks have a curious habit of placing near the edge of the nest a little bank of moss, on which they will at times deposit worms as they bring them, that the young birds may learn to pick them out as they quickly glide from their view. He also says that they will, like the Curlew, swallow mussels, although not to the same extent, and on dissecting those shot from among rocks and seaweed, he found that small shell-fish had been bolted whole. They also obtain their food under circumstances which, if mentioned, would hardly prove satisfactory to lovers of 'trail.'

It is a mistake to suppose that Woodcocks on arrival are lean and out of condition, nor does a continuance of frost reduce them as it does Snipe, although it tames them. Sir R. Payne-Gallwey says that out of hundreds which he examined during the exceptionally long and severe winter of 1880-81, only a dozen were small and poor birds, and at the end of the frost he picked out three birds each of which weighed exactly sixteen ounces, a fourth weighing eighteen and a quarter ounces. The latter is very remarkable, for birds of fifteen ounces are far above the average. The Author was indebted to the kindness of Lord Braybrooke for the following particulars of some Woodcocks of very large size, with permission to attach the statements to this history.

Copy of a letter from Lady Peyton to Miss Hoste, dated Uggeshall, December 25th, 1801.

"My dear Miss Hoste,

"The Woodcock which Mr. Hoste inquires after, was found sitting on a very low branch of a fir-tree in the long plantation at Narborough,* about eleven o'clock in the morning, by James Crow the postilion, who was exercising the coach-horses. He came back with the intelligence to the house, and the keeper immediately went out and shot the Woodcock. I saw it weighed both in scales and steelyards, as did Sir Henry, and a carpenter at work from Swaffham; and, wonderful as the weight may appear, it was exactly twenty-seven ounces. I believe it was about 1775 or 1776. Some years before that, a Woodcock was killed at Hadleigh, in Suffolk, which weighed twenty-four ounces." †

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* "The snow was deep, and the bird was resting on the branch of a spruce fir, weighed down to the ground."

† It is impossible to question the statement of a lady, but it may be permis-

"Lady Peyton's brother, the late Lord Stradbroke, then Sir John Rous, told me (Lord Braybrooke), he recollected arriving at Downham, Sir Henry Peyton's residence, twenty-four hours after the Woodcock was shot, and hearing the particulars; but the bird had been dressed.

"The Earl of Leicester also told me, that he, in company with Mr. Ralph Dutton, when they were young men, followed a gigantic-looking Woodcock for some hours, near Holkham, but could not get near him."

In the early part of the sixteenth century the Woodcock was valued at less than the Golden Plover, and even now it is little esteemed as food by the peasants in Norway and some other parts of Europe. In the fifth Earl of Northumberland's 'Household Book,' begun in 1512, the price of a Woodcock is stated to be one penny or three-halfpence; and in the L'Estrange 'Household Book,' so frequently quoted here, the reward for four Woodcocks on the 18th of October, is fourpence; and in another instance, for three Woodcocks, sixpence. By the time of Willughby (1688) the bird was, however, better appreciated, and in his 'Ornithology' we find the well-known couplet:—

"If the Partridge had the Woodcock's thigh,
'Twould be the best bird that ever did fly."

Shakespeare's works contain many allusions to the stupidity of the Woodcock, and the gins and springes to which it fell an easy victim.

The Færoe Islands appear to be outside the line of the westward migration of the Woodcock, for, according to Major Feilden, it has only once been observed there, but in Norway it is common from spring to autumn up to the Arctic Circle, and straggles a little further north. The vast forests of Norway, Sweden, and some portions of Russia are, in fact, its principal breeding quarters in Europe, and large numbers are annually reared there, in spite of the unsportsmanlike

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sible to quote the late Mr. Gould, who remarked, in reference to a Woodcock shot near Halifax in 1861, and said to have turned the scale at twenty ounces—"A bird of this weight I have never seen."

practice which prevails, or did so until very lately, in Scandinavia and Northern Germany, of shooting the Woodcocks on their arrival in spring when they "rode," to use the word which is still employed in East Anglia.* A limited number breed in Northern and Central Europe as far as Upper Italy, and in the mountains which sweep round Austria down to Transylvania, as high up as the limit of tree-growth; but in the Pyrenees, and the Iberian Peninsula, it is, as in the rest of Europe, principally a visitor on migration, and in winter. Enormous bags have been made in the woods along the coast of Epirus and Albania at that season. In the Canaries, Azores, and Madeira, it would appear to be partially resident. Its winter range can be traced along the northern portion of Africa to Egypt, Palestine, and Asia Minor; in Persia it is found at that season in the large gardens and plantations; and, visiting India regularly between October and February, it straggles to Ceylon and Tenasserim. The late A. Anderson found a nest containing four hard-set eggs from which his companion, Dr. Triphook, shot the bird, on the 30th June, in Upper Kumaon, at an elevation of 10,000 feet (Str. Feath. 1875, p. 356), and it seems probable that it breeds in other parts of the Himalayas. To the north of the watershed it is found breeding in the mountains about Lake Baikal, and the Bureja mountains; it breeds in Japan as far south as Fusijan; and it goes down to China. As a straggler it has been recorded as occurring at St. John's, Newfoundland, on the 9th January, 1862, and in New Jersey; † also in Virginia. ‡

Many sportsmen believe that the sex of the Woodcock can be determined by the plumage: the examples which have the external web of the outer primary devoid of tooth-like markings being the males, whilst those which exhibit the markings are the females. The late Mr. Gould, however, who in the course of his investigations dissected, measured, and weighed many hundred individuals, states that these tooth-like markings are absent in old birds of both sexes, although strongly marked in the young; and he asserts that neither by plumage nor by size can the sexes be distinguished with certainty. He considers that there are two distinct races: one large and grey, and the other small and red, which generally keep separate from each other on migration; but on the whole he believes that the males have generally the shorter bill, the longer wing, and the finer tail, while the rump is more red, and the barrings of the under surface of the body more distinct.*

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* Full descriptions of this destructive and short-sighted proceeding, which, however, seems to have possessed a fascination for a certain class of sportsmen, are to be found in Lloyd's works.

† Lawrence, Ann. N. Y. Lyc. Nat. Hist. viii. p. 292; Baird, Am. Journ. Arts and Sc. 1866, p. 338.

‡ Coues, Am. Nat. x., July 1876, p. 272.

The beak is dark brown at the point, pale reddish-brown at the base, and generally about three inches long; the irides dark brown; the eye large, convex, and prominent; from the beak to the eye a dark brown streak: the colour of the plumage of this bird is a mixture, principally of three shades of brown; namely, pale wood-brown, chestnut-brown, and dark umber-brown; each feather on the upper surface of the body contains the three shades, but so disposed as to produce a beautifully variegated appearance. The cheeks pale wood-brown, spotted with dark brown; the forehead to the top of the head, greyish-brown; occiput and nape rich dark brown, transversely divided into three nearly equal patches by two bars of yellow wood-brown; each feather of the neck below pale brown, edged with dark brown; the back greyish-brown, varied with reddish-brown, and dark umber-brown; all the wing-coverts reddish-brown, with open oval rings of dark brown; primary quill-feathers blackish-brown, with triangular spots of pale reddish-brown along the margin of each web; secondaries and tertials of the same ground-colour, blackish-brown, but the light-coloured marks are more elongated, and extend from the margin of the web to the shaft of the feather; rump and upper tail-coverts chestnut-brown, tinged with grey and barred transversely with dark brown; tail-feathers black above, tipped with pure dark grey; chin very pale yellow-brown; neck in front, breast, and all the under surface of the body, wood-brown, transversely barred with dark brown, both shades of brown on the under surface becoming lighter in old birds; under wing-coverts pale brown, barred with dark brown; under surface of the quill-feathers dry-slate grey, the triangular markings yellowish-grey; under surface of the tail-feathers nearly black, tipped with delicate snow-white; legs and toes varying from livid brown to pale yellow; claws black.

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* Birds of Great Britain, vol. iv.

The whole length is about fourteen inches and a half. From the carpal joint to the end of the wing, eight inches and a half; the first quill-feather the longest.

Varieties in plumage are not uncommon, sometimes with a portion of white, or entirely of a dull yellowish-white, or buff colour. In one example every feather of this bird was of a pure and delicate untinted white, the bill and legs being very pale wood-brown. Mr. J. Whitaker, of Rainworth Lodge, Mansfield, possesses some remarkable varieties: one, of especial beauty, is white, boldly spotted and marked with black patches on the centres of the feathers of the mantle, head, and tail, and with faint dark hair-lines down the secondaries and primaries. It was shot near Londonderry in 1880.

In the year 1833, a Woodcock with white feathers in the wings was observed in a cover on the manor of Monkleigh, near Torrington, in the county of Devon. The same bird, or one of exactly similar plumage, reappeared in the same place during the four succeeding seasons, in which period it was so repeatedly shot at by different persons without effect, that it at last acquired among the country people tho name of "the witch." In the year 1837, however, it was killed on the property of the Rev. J. T. Pine Coffin, of Portledge, who had the specimen preserved.

In reference to the subject forming the vignette, it may be explained that on the 29th of November, 1829, the late Sir Francis Chantrey, when shooting at Holkham, killed two Woodcocks at one shot. To record this event, Sir Francis Chantrey sculptured two Woodcocks on a marble tablet, which he presented to Mr. Coke, afterwards Earl of Leicester, and which is now in the library at Holkham.* Sir Francis afterwards presented the Author with the drawing on wood, which is here engraved. The occurrence, from its singularity, has been the subject of many epigrams and complimentary verses, which have been collected in a small volume by Mr. J. P. Muirhead, entitled 'Winged Words on Chantrey's Woodcocks.' The following couplet was written by the late Mr. Hudson Gurney :—

> "Driven from the north, where winter starved them,
> Chantrey first shot, and then he carved them."

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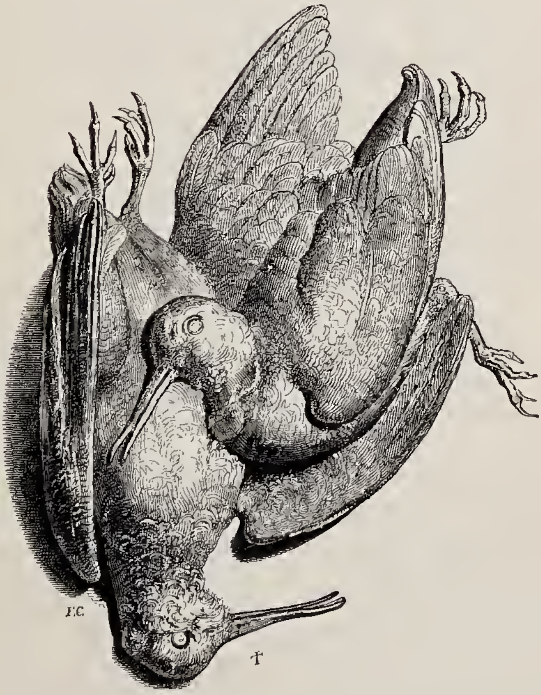
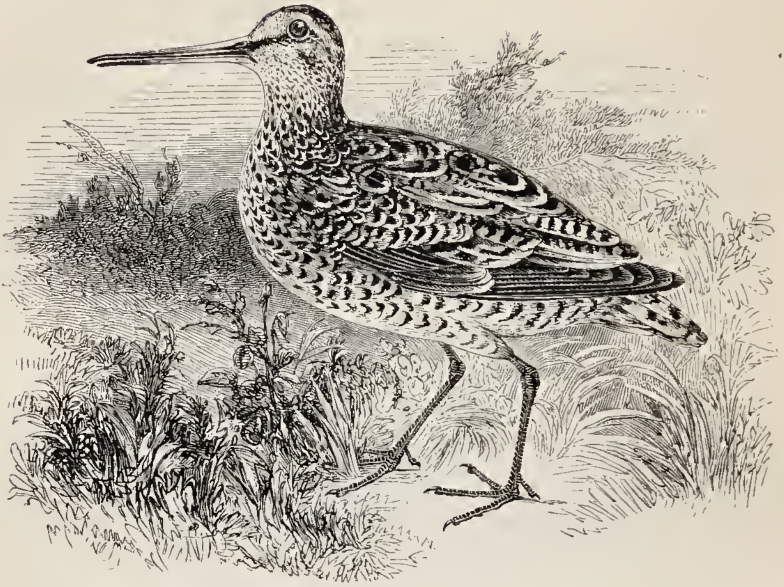
* Mr. Stevenson states (B. of Norfolk, ii. p. 298) that although the date carved on the marble is 1830, the game-book unquestionably shows that the event took place in the previous year. The version of the couplet now given, which differs slightly from that in previous Editions of this work, and also from that in 'Winged Words,' is, according to Mr. J. H. Gurney, the correct reading.



LIMICOLÆ. *SCOLOPACIDÆ.*



Gallinago major (Gmelin*).

THE GREAT SNIPE.

Scolopax major.

Gallinago, *Leach*†.—Beak very long, straight, slender, flexible, slightly elevated towards the tip of the upper mandible, which is decurved at the point and projects beyond the lower; both mandibles grooved over the basal half of their length. Nostrils lateral, linear, basal, covered by a membrane. Legs rather long and slender; naked space on the tibia short; tarsus scutellate; three toes before, long, slender, divided to the base; hind toe slender, elevated; claws slender, acute. Tail slightly rounded. Wings moderate, pointed, the first quill-feather the longest; inner secondaries very long.

The Great Snipe was first described as a British bird by Pennant, from a specimen killed in Lancashire, preserved in the Leverian Museum, and was at that time considered a very rare bird: it was, however, probably undistinguished by many from the Common Snipe, till specific distinctions among species were closely investigated.

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* *Scolopax major*, Gmelin, Syst. Nat. i. p. 661 (1788).

† Syst. Cat. Mam. and Birds Brit. Mus. p. 30 (1816).

It is now known to be a regular visitant, although in fluctuating and, generally, in small numbers; its arrivals nearly invariably taking place between the middle of August and the middle of October, on the way to its southern winter quarters. Almost all the examples obtained have proved to be young birds of the year; and it is evident that the line of the return migration lies to the east of the longitude of the British Islands, instances of its occurrence in spring being exceedingly rare. Mr. Stevenson only cites one: an adult bird, which, being observed by a fisherman making for the land, was shot on its arrival on Yarmouth beach. On the whole it has been more frequently noticed in the eastern and southern portions of England than in the centre and west; and the same remark applies to Scotland, but irregular occurrences on the western side of the latter are not uncommon. It is believed to visit the Orkneys, and Dr. Saxby shot several in the Shetland Islands. Of late years it has been recorded at intervals as occurring in various parts of Ireland, and Mr. Harrington of Tralee, a noted Snipe-shot, informed Sir R. Payne-Gallwey that he had killed eleven in ten years' shooting.

The Great Snipe, Woodcock Snipe, or Solitary Snipe, as it is often called, appears to prefer drier situations than its congeners, many examples having been shot from dry grass-fields, heather, potatoes in a sandy soil, barley layers, and turnips. Selby speaks of an unusual number of arrivals in the dry warm autumn of 1826, and a similar coincidence was remarked in 1868. On its habits as observed in Norfolk the late Rev. R. Lubbock wrote to the Author: "This species is very frequently found in pairs, and does not deserve to be called Solitary. On the wing it looks but little larger than the Common Snipe, and may be recognized at once by its tail, spread like a fan. Its flight is steadier and heavier, which may in some degree arise from the aptitude of the bird to make fat. I have handled more than a dozen specimens; have shot the bird three times myself; and all I have seen were loaded with flesh and fat. I find I have noted that Richardson, the fenman, killed six of the Great Snipes in the second week of September, 1835; four of these birds were in pairs, and proved male and female respectively." When flushed it occasionally utters a short harsh cry of alarm, although more frequently it rises in silence, and it appears to have no regular call-note except in spring.

At the pairing season, as we learn from the observations of Mr. Greiff and Mr. R. Collett, the Great Snipe has a *lek* or playing-ground, similar to that of some of the Grouse-tribe, the places of meeting, or *Spil-pads*, being frequented by several pairs of birds from dusk to early morning. The male utters a low note resembling *bip bip, bipbip, bipbiperere, biperere,* varied by a sound like the smacking of a tongue, produced by striking the mandibles together smartly and in rapid succession; he then jumps upon a tussock of grass, swelling out his feathers, spreading his tail, and drooping his wings in front of the female, and uttering a tremulous *sbirrr.* This is called 'drumming' by Mr. Collett, but the late Mr. Dann says that the birds fly to a great height and produce a drumming noise as they descend by a slight and peculiar vibration of the wings. The males fight by slashing feebly with their wings, but the combat is not of long duration.

The nest is a mere depression, or a hole scraped in the moss in some hillock or tussock above the level of the marsh, and the eggs are four in number. As a rule they are of a pale olive-grey or stone-buff with pale purplish underlying blotches, and bold purplish-brown surface-markings, this colour being unmistakable and characteristic; but at times there is a greenish tint which renders it difficult to distinguish them from some eggs of *Machetes pugnax,* to which species indeed most of the so-called Great Snipes' eggs taken in Holland should really be ascribed. They measure about 1·8 by 1·2 in., being much larger than eggs of the Common Snipe, and very different in general appearance.* In one instance Messrs. Godman found, on returning to a nest they had previously visited, that the bird whilst sitting on her nest had torn up the surrounding moss and covered its back with it for the purpose of concealment: a proceeding similar to that of the Woodcock already noticed. Incubation begins the end of May, or early in June, lasting eighteen days, and the young, which run as soon as they are hatched, are ready to fly by the middle of August.

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* A supposed instance of the breeding of the Great Snipe in Norfolk in April, 1846 (Zool. p. 3175), may be rejected; the date is improbable, and the egg agrees with that of the Common Snipe. (*Cf.* Stevenson, B. Norfolk, ii. p. 300.)

The food of the Great Snipe consists of larvæ of insects, especially of the species of the genus *Tipula*, small slugs, and worms; always, according to Mr. Collett, mixed with a few small stones. The weight in autumn, when the bird is often a perfect ball of fat, varies from seven to ten ounces.

In summer the Great Snipe is found breeding throughout suitable localities in Norway and Sweden up to about 70° N. lat., frequenting both the alpine or fell region and the marshes of the lowlands and coast. An interesting account of its nesting at Bodö in lat. 67° N. in a marsh which is now drained, is given by Messrs. Godman (Ibis, 1861, p. 87). In Denmark it breeds in several localities, especially in Jutland, and it does so in many of the provinces along the coast line of Northern Germany to Holland, where, however, it is very local. Throughout Northern Russia it breeds, although in decreasing numbers, from the Baltic to the province of Archangel; it was found nesting in abundance at the delta of the Petchora by Messrs. Seebohm and Harvie-Brown; and it appears to breed as far south as the central provinces; also, according to Nordmann, in the marshes of Bessarabia. In the rest of Europe it is principally known as a migrant, but east of Savoy it begins to occur as frequently in the spring as in the autumn, and in Italy, Malta, and Albania it is distinctly more common on the vernal migration. In the Spanish Peninsula it is of irregular occurrence: principally on the east coast. Along the southern shores of the Mediterranean it has been found occasionally in Morocco, Algeria, and Egypt; it passes southwards through Nubia to the Transvaal and Natal, arriving in September and October, and leaving in April; and in the latter month Andersson obtained a specimen at Ondonga, in the northern portion of Damara Land.* Passing to Asia, the Great Snipe has been obtained at Erzeroum, and by Canon Tristram at Beyrout (Ibis, 1882, p. 408), also in Mesopotamia, and Sir O. St. John found it not uncommonly in Northern Persia, but it does not appear to have been recorded as yet from Afghanistan or India. In Siberia Mr. Seebohm found it plentiful on the Yenesei, near the Arctic circle, arriving there on the 11th June, and Radde states that he met with it near Irkutsk, and also in the Bureja mountains, but he did not obtain specimens, nor do David or Swinhoe record it from China. In Japan it seems to be replaced by *Gallinago australis* (Lath.), a larger and conspicuously distinct species.

In the adult the beak is dark brown at the end, pale yellow-brown at the base; irides dark brown; from the base of the beak to the eye a dark brown streak; above that, over the eye and the ear-coverts, a streak of pale brown; forehead and top of the head rich dark brown, divided along the middle line from before backwards by a pale brown stripe; neck all round pale brown, the centre of each feather darker brown; interscapulars, scapulars, and back, rich brownish-black, with central lines and broad margins of rich buff or fawn colour; lesser wing-coverts nearly black, the upper series tipped with pale brown, the lower series tipped with white; great coverts black, tipped with white; primary quill-feathers dull greyish-black, with lighter shafts; secondaries dull black, tipped with white; tertials black, barred and streaked with pale brown; rump very dark brown, edged with pale brown; upper tail-coverts pale yellow-brown, varied with dark brown; tail feathers sixteen;† the four on each outside white, crossed with two or three bars on the outer webs only near the base, the others rich brownish-black over three-fourths of their length from the base, then a patch of chestnut, bounded by a circle of black, and tipped with white; chin pale yellow-brown; breast and sides of the body with half-circular bands of brownish-black on pale brown; belly and vent greyish-white; legs and toes varying in colour from a livid green to a pale drab; claws black.

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* J. H. Gurney, B. Damara Land, p. 312; T. Ayres, Ibis, 1877, p. 351.

† The number of tail-feathers is subject to individual variation, as in the Common Snipe. The late Mr. Rodd recorded (Zool. s.s. p. 1482) an example killed in Cornwall which had eighteen tail-feathers, and Professor Giglioli states (Ibis, 1881, p. 210) that he has a specimen with the same number (which was supposed by Savi to be the normal one) in the Museum at Florence.

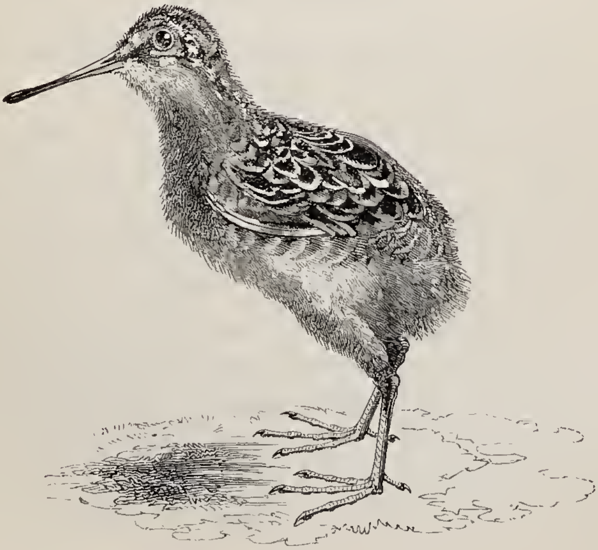
The whole length is about twelve inches. From the carpal joint to the end of the first quill-feather, which is the longest in the wing, five inches and a half.

There is little if any constant or appreciable external difference between the sexes. The young may be recognized by having the outside tail-feathers barred across *both* webs; the white bars on the wings and the markings of the under parts are less defined, and the upper parts are more rufous.

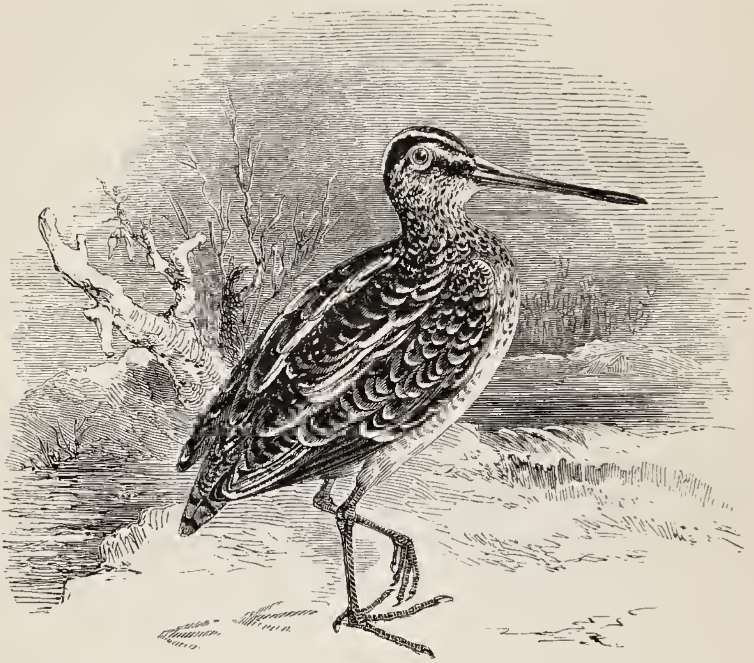
The Great Snipe may be distinguished from the Common Snipe by its larger size and proportionately shorter legs and bill; but especially by the closely barred under parts and the greater amount of white in the tail-feathers, which, moreover, are normally sixteen, and not fourteen, in number.

The young in down are very much lighter in tint, less variegated, and less rufous than those of the Common Snipe, in which the predominant colour is a deep ruddy chestnut.

The vignette below represents the young of the Common Snipe.



LIMICOLÆ. *SCOLOPACIDÆ.*



GALLINAGO CŒLESTIS (Frenzel*).

THE COMMON SNIPE.

Scolopax gallinago.

THE COMMON SNIPE may be truly characterized as indigenous to this country. It is known to breed in varying numbers in almost every county in England and Wales in which drainage has not abolished the localities suitable to its habits; and, as might be expected, it is comparatively abundant in the marshes of Suffolk, Norfolk, and Lincolnshire. On the moorlands of the northern districts and up to a considerable elevation in Scotland and Ireland, the species is generally distributed and numerous during the breeding-season. Still, the quantity produced in the whole of the British Islands bears but a small proportion to the numbers seen here, so generally dispersed, which visit us in autumn and winter from various parts of Scandinavia, and leave us again in March, frequently shifting their ground under the influence of the weather, so that the sportsman who has enjoyed excellent shooting one day, may find the same spots entirely deserted on the following. The great flight arrives on our shores about the end of October or early in November, at which period individuals are frequently killed by striking against the lanterns of lighthouses. As many as a hundred at a time were observed passing over the Gull Light-vessel on the 23rd November, 1881, at 10.30 A.M., with direction to the west.

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* *Scolopax cœlestis*, Frenzel, Beschr. der Vögel und ihrer Eier in der Gegend um Wittenberg, p. 58 (1801).

In America our Snipe is replaced by a closely-allied species, *Gallinago wilsoni*, with axillaries and under wing-coverts so closely barred that black is the predominating colour; the tail-feathers are usually sixteen in number, and not fourteen, as in our bird, and the outer ones are narrower.* In Greenland, however, our Snipe has been observed so often that Reinhardt was inclined to think that some pairs might breed there (Ibis, 1861, p. 11). In Iceland it is tolerably abundant, and in the Færoes it becomes numerous, many remaining throughout the winter. During the summer it is of general distribution throughout Northern Europe, but the greater cold of the Continental winter forces the majority to take their departure. Mr. Godman found it in the Canaries, Madeira, and the Azores, and in the latter he believes it breeds, as a few pairs are said to do in the marshes of Algeria; but in Europe its nesting range has not been ascertained to extend south of Northern Italy. As a migrant or a winter visitor, it is known all over Southern Europe, the islands of the Mediterranean, and along the northern portion of Africa, from Morocco to Egypt, where Captain Shelley says that in February he has killed over forty couple in a day. It ascends the Nile to Nubia and Abyssinia, and, by the elevated lake Ashangi, Mr. W. T. Blanford found it as late as May. Von Heuglin observed it in Arabia Petræa and in the Somali country; and it occurs in Socotra. On the western side of Africa, the winter range of our Snipe extends to the Gambia, but in the southern portion of that continent it is replaced by *G. æquatorialis*.

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* Mr. Harting (Handbk. Brit. Birds, p. 143) has recorded a Snipe shot at Taplow Court, Bucks, on 1st August, 1863, and sent to Mr. Gould, at whose house he examined it in the flesh. It had only fourteen tail-feathers, but from the general appearance of the plumage, and the barrings of the axillary plumes, he was then inclined to identify it with the American species, *G. wilsoni*. After careful search through the large collection in the British Museum, of which Mr. Gould's now forms a part, this specimen cannot be discovered.—ED.

In summer our Snipe is found across Siberia up to, and even beyond, the Arctic circle; but on the Yenesei, in 67° N. lat., Mr. Seebohm found a preponderance of the Pin-tailed Snipe, *G. stenura*, a species which may be distinguished by the very narrow stiff feathers on each side of the tail, which is also shorter, and by the black bars to all the under wing-coverts, some of which are white in our Snipe. Both these species visit India in abundance during the cold season. Our bird is found in winter in Asia Minor and Persia; it breeds in Turkestan, and on 12th June Dr. Scully obtained its eggs on the lofty table-lands of Yarkand, whence it departs in winter. On its migrations it evidently crosses the great ranges of Central Asia; it has been obtained in Japan, is very abundant in China, and goes south as far as Ceylon, the Philippine Islands, and Malaysia.

Towards the latter half of March, or beginning of April, according to climatic conditions, Snipe begin to produce that humming or bleating noise which has obtained for the species the name of 'Moor-lamb' in Lincolnshire, 'Heather-bleater' in lowland Scotland, the equivalents of 'air-goat' in the various branches of the Celtic language, 'Chèvre volant' in France, and 'Himmelsgeiss' in Germany. This sound is always uttered on the wing, the bird soaring at an immense height, often out of sight, and descending with great velocity and with a tremulous movement of the pinions. These flights are more commonly performed towards evening, and continue while the female is incubating. The cause of this peculiar sound has been much disputed. Mr. Selby supposed that it was produced by the wings, but Mr. W. Meves, of the Stockholm Museum, in an elaborate paper, translated by the late John Wolley (P. Z. S. 1858, p. 199), stated that a series of experiments showed that the sound was due to the vibration of the stiff webs of the outer tail-feathers, acted upon by the air in the course of the rapid descent of the bird. This explanation was accepted by several ornithologists; but Mr. John Hancock, whose powers of observation are second to none, having tried the experiments upon which so much stress has been laid, pronounces them to be of little real value. His exhaustive arguments are too long to be given, but after pointing out that the Snipe is by no means the only bird which produces this 'drumming,' 'bleating,' or 'neighing' sound, he considers that it results from the action of the wings, and that the tail-feathers are incapable of producing anything audible at a distance.* Colonel W. V. Legge (Birds of Ceylon, p. 1219), describes his personal experiences in Wales with the result that in his opinion the wings were the primary cause of the sound, and the tail-feathers, spread like a fan, were the secondary cause. The question is well set forth by Mr. J. E. Harting (Zool. 1881, pp. 121–131), who adheres to the 'wing theory.'

The Snipe has been recorded as having eggs as early as the 20th of March, but, as a rule, it is not before April that it makes its slight nest, consisting only of a few bits of dead grass or dry herbage, collected in a depression on the ground, and sometimes upon or under the side of a tuft of grass or bunch of rushes. The eggs are usually four in number, of a pale yellowish or greenish-white, the larger end spotted with two or three shades of brown; these markings are rather elongated, and disposed somewhat obliquely in reference to the long axis of the egg; the measurements being about 1·6 by 1·1 in. Incubation, undertaken by the female only, lasts rather more than a fortnight, and the young are able to run on emerging from the shell. It would appear that two broods are sometimes reared in the season, for the young in down have been observed in the middle of August.

The Snipe's alarm note, *scape*, *scape*, or *chissick*, is as well known to sportsmen as is its wild zig-zag flight on being flushed. When feeding, however, it may sometimes be closely approached, unawares, and will then try to escape notice by squatting close down to the ground, or in the water. That it occasionally perches on trees, notice-boards, &c., although hotly disputed at one time by persons of limited experience, is now too well known to call for extended remarks, but ample evidence will be found in Mr. Stevenson's 'Birds of Norfolk,' ii. p. 329, and in 'The Ibis,' 1876, p. 310, where Messrs. Seebohm and Harvie-Brown describe one, of many, which was shot for identification, perched on the topmost twig of a larch seventy feet from the ground, with its head lower than its tail and body, and uttering at intervals its double, clucking *tjick-tjuck, tjick-tjuck.* Many others of the *Scolopacidæ,* and some Gulls and Ducks, are also well known to perch.

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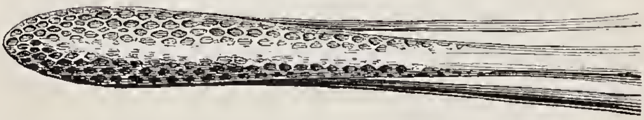
* Nat. Hist. Trans. Northumberland and Durh. vi. pp. 106–113.

The feeding-ground of the Snipe is by the sides of land springs, or in water meadows; and in low flat countries they are frequently found among wet turnips. The holes made with their bills, when searching for food, are easily traced. In a communication on the subject of Snipes,* the Author described a peculiarity in the beak of the species of this genus. The end of the beak of the Snipe, when the bird is alive, or if recently killed, is smooth, soft, and pulpy, indicating great sensibility; but some time afterwards it becomes dimpled like the end of a thimble. If the upper mandible be macerated in water for a few days, the skin, or cuticle, may be readily peeled off; and the engraving here introduced is a magnified representation of the appearance then exhibited.



The external surface presents numerous elongated, hexagonal cells, which afford at the same time protection, and space for the expansion, of minute portions of nerves supplied to them by two branches of the fifth pair; and the end of the bill becomes, in consequence of this provision, a delicate organ of touch, to assist these birds when boring for their food in soft ground; this enlarged extremity of the beak possessing such a degree of sensibility as to enable these birds to detect their prey the instant it comes in contact with it, although placed beyond the reach of sight. The food of the Snipe consists of worms, insects, small shells with their animal inhabitants, and minute seeds; these last swallowed probably while adhering to the glutinous surface of its more usual animal food. An interesting account of a tame Snipe occurs in 'The Zoologist,' p. 1640. When the feeding-ground of the Snipes becomes limited by the effects of frost and snow, the birds suffer greatly, and soon become very thin. The severe winters of 1878–79, and of 1880–81, caused great havoc, the unfortunate birds being reduced to skeletons, and even in that condition they were not spared in Ireland, the fishermen actually dragging their herring-nets by night over the unfrozen spots, to hawk their miserable prey about the country at a penny apiece.* The weight of an ordinary bird is about four ounces; but the late late Mr. Lubbock has recorded one which weighed nearly eight ounces, and another of quite that weight was recorded from Cardigan in 'The Field' of 16th December, 1882. Mr. Lubbock's bird, and one shot by Mr. Stevenson, appear to have belonged to a large form of a russet-brown hue, which has also been noticed by the late Mr. Rodd in Cornwall, and which has occurred in many other parts of England. Mr. Gould was at one time inclined to consider that it might be entitled to specific distinction, in which case he proposed for it the name of *Gallinago russata*. An individual which happened to possess sixteen tail-feathers, the outer ones being elongated, received the name of *Scolopax brehmi* from Kaup.

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* Loudon's Mag. Nat. Hist. iii. p. 29 (1830), under the initials S. T. P.

In winter the beak is dark brown at the end, pale reddish-brown at the base; the irides dark brown; from the base of the beak to the eye, a dark brown streak; crown of the head very dark brown, with two lateral, and one central, buff-coloured streaks; back dark brown, slightly spotted with pale brown; interscapulars and scapulars dark brown in the centre, with broad external, lateral margins of rich buff, forming four conspicuous lines along the upper surface of the body; wing-coverts spotted with pale brown, on a ground of dull black, and tipped with white; tertials barred with pale brown, on a black ground; the primaries dull black, secondaries the same, but tipped with white; upper tail-coverts barred, alternately, with pale brown, and dusky-black; tail feathers fourteen, basal-half dull black varied on the margins with pale reddish-brown, on the distal-half of the feather an oval patch of pale chestnut, bounded by a dusky-brown band, and tipped with paler chestnut. Chin brownish-white; cheeks pale brown, ear-coverts darker; sides, and front of the neck, pale brown, spotted with darker brown; breast, belly, and vent, white; sides and flanks greyish-white barred with dusky-black; under tail-coverts pale yellow-brown barred with greyish-black; legs and toes greenish-brown.

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* The Fowler in Ireland, p. 213.

A Snipe shot in the first week in August, an old bird in summer plumage, but with the autumn moult just commencing, has the outer lateral margin of the interscapular, and scapular feathers narrow, and almost white; all the parts of the plumage on the back and wing, which are pale yellow-brown in winter, are in this bird of a rich reddish-brown; the first new interscapular feather on each side has just appeared, with its usual broad, buff-coloured margin, affording a striking contrast to the narrower white margins of the feathers lower down on the body.

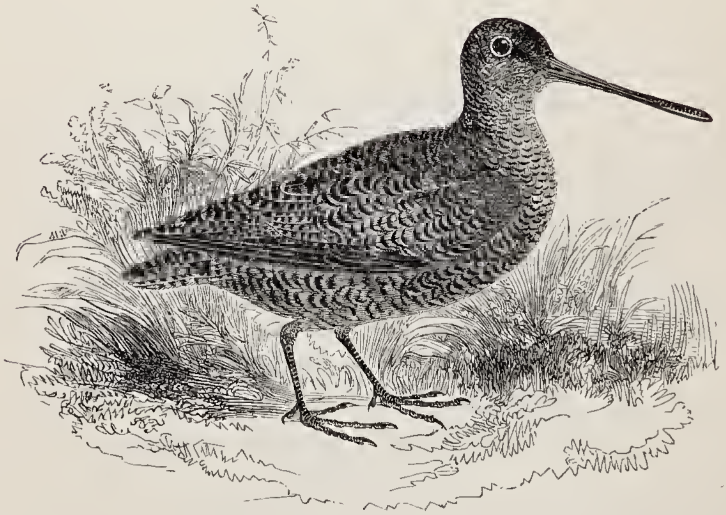
The whole length of a Common Snipe is about ten inches and a half; the length of the beak about two inches and three-quarters; from the carpal joint to the end of the first quill-feather, which is the longest in the wing, five inches; the sexes are alike in plumage, but according to Gould, the male is the larger.

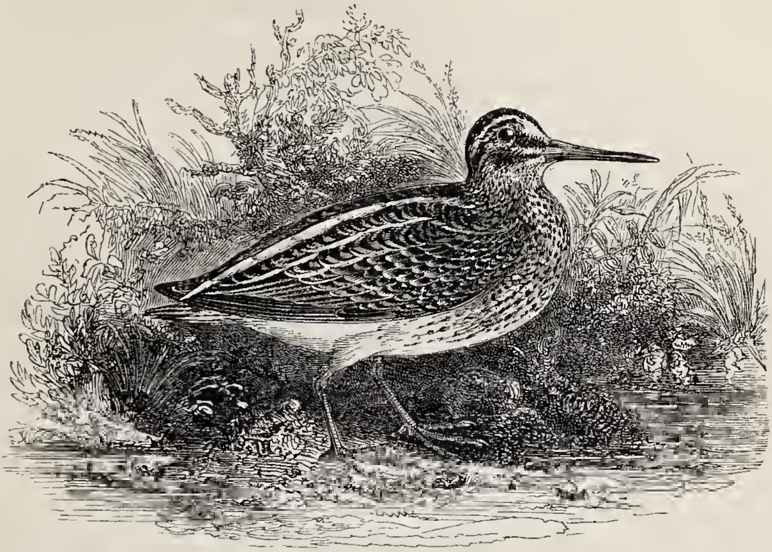
A young bird about two-thirds grown, with the beak only one inch long, and with down still adhering about the head, has the narrow, light-coloured margins, and the rich red-brown on the feathers of the upper surface of the body and wings, as in the old bird in summer.

Albinos, and fawn-coloured and abnormally mottled varieties of the Common Snipe have at times been obtained, and some remarkable examples are in the collection of Mr. John Marshall, of Taunton. Individuals are occasionally recorded of a form which is now generally admitted to be a melanic variety, but which was formerly considered to be entitled to specific rank under the appellation of 'Sabine's Snipe,' and as such it has been figured and described in former Editions of this work. This name was conferred by the late N. A. Vigors (Tr. Linn. Soc. xiv. p. 557) upon a bird shot by the Rev. Chas. Doyne, of Portarlington, Queen's Co., Ireland, on the 21st August, 1822; and many examples have subsequently been recorded. Mr. J. E. Harting, in 'The Field' of 10th December, 1870, furnished a list of the reported occurrences up to that date, from which it appeared that it had been met with in Ireland and England in every month of the year excepting June and July. Since then the occurrence of an example near Montrose, its first appearance in Scotland, has been recorded by Major H. W. Feilden (Zool. s.s. p. 3188); and there have been a few more in other parts of our islands. A light-coloured specimen now in the foreign collection of the British Museum, was stated by the late Jules Verreaux to have been shot near Paris. At the time that 'Sabine's Snipe' was assumed to be a distinct species, many supposed points of difference between it and the Common Snipe were detected and insisted upon: especially the number of the tail-feathers, which was stated to be only twelve; but so many examples proved to have fourteen, that this distinction had to be given up. The ovate shape of the dorsal feathers was another point, which may be accounted for by the supposition that in this, as with many other varieties, the examples are all birds of the year. Mr. Harting has described (P.Z.S. 1877, p. 533) an example intermediate in plumage. If it were a good species, it is remarkable that, in spite of its almost complete restriction to the British Islands, it should never have been found breeding.

The following is the description of 'Sabine's Snipe,' and the engraving of the bird is given as a vignette.

The beak is as in the normal bird; upper part of the head, the back of the neck, back, scapulars, wing-coverts and tertials, dusky-brown, each feather varied by narrow transverse bands of pale yellow-brown which are less numerous on the back than over the wings; primary quill-feathers dull black, with black shafts; upper tail-coverts greyish-brown; tail-feathers with the basal half black, the terminal half chestnut-brown, spotted and barred with black: the two centre feathers have rather more, and the outer feathers rather less of black than the others; chin, neck, breast, and all the under parts of the body a mixture of dull brown and pale yellow-brown in alternate narrow bars over the whole surface; legs and toes very dark chestnut-brown.





Gallinago gallinula (Linnæus *).

THE JACK SNIPE.

Scolopax gallinula.

Though allied to the Snipes in its haunts and general habits, the Jack Snipe is still distinguished by various peculiarities.[†] It is more decidedly a winter visitor only, the instances of its remaining through the summer in this country being very rare. It is more solitary than the Common Snipe, though sometimes found in pairs, but these seldom get up together, or go far before they settle again; and although it feeds on bare, boggy ground, yet when not searching for food it chooses sheltered situations among strong rushes, or coarse long grass, and the luxuriant vegetation common to moist grounds. In such places the Jack

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[*] *Scolopax Gallinula,* Linnæus, Syst. Nat. Ed. 12, i. p. 244 (1766).

[†] Owing to the tail-feathers being only twelve in number, and some other points of difference, Kaup made it the type of the genus *Limnocryptes;* it is also distinguished by some osteological peculiarities, but so are the two preceding species, and for the purposes of the present work it appears convenient to place the three British Snipes in the genus *Gallinago.*

Snipe is remarkable for its sluggishness, seldom taking wing till almost trodden upon, which has induced French naturalists to call this species *Bécassine sourde*, as though it were deaf to the approach of an enemy; and instances have occurred in which a Jack Snipe has allowed itself to be picked up by hand before the nose of a pointer. Though generally dispersed over the British Islands in winter, it is less numerous as a species than the Common Snipe, and does not, when flushed, utter any note. The Jack Snipe appears to have particular attachment to certain localities; so much so, that a sportsman shooting for years in succession over the same ground, knows exactly where to look for any Jack Snipe that is in his country. Selby, who was a good sportsman as well as an accomplished naturalist, says of this species, in reference to his own locality in Northumberland, "the first flights generally arrive here as early as the second week of September, as I have seldom failed to meet with it in a favourite haunt between the 14th and 20th of that month." Mr. Cordeaux, writing of Lincolnshire, says that it comes the last week in that month; and there is often a large arrival with a full moon and east wind, in October. It occasionally strikes against lighthouses and light-ships, but less frequently than the Common Snipe.

Prior to its departure in April northwards this bird exhibits in its plumage all the bloom and brilliancy of the approaching nuptial period. Individuals have occasionally been known to remain until late in the spring, and even through the summer, and more than fifty years ago, when it was fondly believed that the Jack Snipe bred in our islands, and that the presence of an individual in summer was to some extent a proof of this, Mr. Girdlestone offered a sovereign to any one who could bring him a specimen of this bird shot at that season. In 1822 he had one brought to him in June; in May, 1824, he and the late Rev. R. Lubbock saw two on Bradwell Common, and, on the 2nd July, 1825, according to Mr. Stevenson, a fenman named Hewitt, who had long been watching one which had remained behind, knocked it down with his hat, it being so ragged, scurfy, and feeble that it could hardly fly. This specimen was presented by Mr. Girdlestone to Mr. Lubbock, and by him to Mr. Newcome, and is still in the collection at Feltwell. "On the 1st August, 1833," says Mr. Lubbock, "a Jack Snipe was shot on Bolton fen in my presence, a perfectly healthy, good-conditioned, well-plumaged bird. The man who shot it told me that once, and only once, he had shot a Jack Snipe in summer upon the same fen. He lives upon the broads and marshes, and would doubtless have detected any, as he is quite alive to the rarity of their appearance. The eggs which have once or twice been offered to me as those of the Jack Snipe were those of the Purre, and I regret that I can say nothing in favour of its breeding in Norfolk. I think that some worm or particular aliment must be wanting here in summer, and that short diet made Mr. Girdlestone's Jack Snipe so feeble and unhealthy. The one shot on the 1st of August might be a migratory bird."

In spite of various assertions respecting the supposed nesting of the Jack Snipe in the British Islands, it may safely be stated that there is not one single well-authenticated instance of its doing so.* For thoroughly identified eggs of this, as of so many other species, oologists are indebted to the perseverance of the late Mr. John Wolley, from whose notes, communicated to the late Mr. Hewitson (Eggs Brit. Birds, Ed. 3, ii. p. 357) the following is taken :—"We had not been many hours in the marsh [of Muonioniska, Lapland], when I saw a bird get up, and I marked it down. The nest was found. A sight of the eggs, as they lay untouched, raised my expectations to the highest pitch. I went to the spot where I had marked the bird, and put it up again, and again saw it, after a short low flight, drop suddenly into cover. Once more it rose a few feet from where it had settled. I fired! and in a minute had in my hand a true Jack Snipe, the undoubted parent of the nest of eggs! In the course of the day and night I found three more nests and examined the birds of each. One allowed me to touch it with my hand before it rose, and another only got up when my foot was within six inches of it. The nest of the 17th of June, and the four of the 18th of June, were all alike in structure, made loosely of little pieces of grass and *equisetum* not at all woven together, with a few old leaves of the dwarf birch, placed in a dry sedgy or grassy spot close to more open swamp." The Jack Snipe weighs about two ounces; its four eggs are more than an ounce and a half. There are three beautifully figured in Mr. Hewitson's work. The eggs, so disproportionate to the size of the bird, are of a yellowish-olive, spotted and streaked with brown, the latter colour being somewhat more predominant than in the majority of those of the Common Snipe; they are also somewhat smaller, averaging 1·5 by 1 in. It is a late breeder, seldom having eggs in Lapland, according to Professor Newton, before the middle of June, and constantly breeding well into August.

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* The records are too numerous for notice : one writer in 'The Field' of 16th September, 1865, gravely describes a nest containing *nine* eggs found in Oxfordshire ! Mr. R. Gray (B. West Scot. p. 314) writes that he has "been informed by Mr. Angus that in one instance, at least, a nest was discovered in Aberdeenshire by J. W. Stuart Burnett, of Keithall." At p. 318 we are told, without any expression of scepticism, that this same fortunate observer found the nest of the Curlew Sandpiper at Loch Spynie, near Elgin, the eggs being just chipped by the young birds, which do not appear to have been preserved : a neglect to be regretted, for both the downy stage of the latter species, and its eggs, are as yet unknown to naturalists.

During the breeding-season the Jack Snipe is generally distributed throughout Norway and Sweden, especially to the north of the Arctic circle, and in Russia it appears to nest from the north to about the latitude of Moscow, but east of Archangel it appears to be unfrequent in summer, and Messrs. Seebohm and Harvie-Brown did not observe it on the Petchora. It is a little doubtful if it breeds in the extreme south of Sweden, or in Denmark; there appears to be no authenticated instance of its doing so in Northern Germany, and former statements as to its nest having been found in Holland must be received with caution. Over the rest of the Continent of Europe it is generally distributed on migration and in winter, and during the latter season, in the south especially, it is often very numerous: at times even more so than the Common Snipe. Many winter in North Africa, and birds have been observed in Egypt as late as

May; and it goes for some distance up the Blue Nile. Eastward, it is found in winter in Palestine, Persia, India, Ceylon, Burmah, and Tenasserim, but in the two latter countries it is of rare occurrence. It visits Southern Afghanistan in winter, but its route cannot at present be traced through the great Asian mountain passes, such as the Pamir; and, on the whole, it would appear that north of the watershed, and east of the Caspian and the Ural mountains, the Jack Snipe is not a common species. It is true that Middendorff found it breeding on the Boganida in 70° N. lat., and that Radde met with it in the Sajan mountains, but he saw it nowhere else in Siberia; it has never been obtained in China: only once in Formosa; and very rarely in Japan.

During the breeding-season the Jack Snipe makes a 'drumming' noise, which Wolley likens "to the cantering of a horse over a hard hollow road: it came in fours with a similar cadence, and a like clear yet hollow sound." Like its congener, it has been seen to perch on rails. Its food consists of larvæ of insects, beetles, &c., always accompanied by a little grit. A continuance of severe weather does not reduce this species as it does the Common Snipe, and the Editor once found that between the fattest of several Jacks and the leanest of some Common Snipes weighed the same day, there was a difference of only $\frac{1}{3}$ oz. in favour of the larger bird. For the successful mode of treatment during a month's captivity see 'The Zoologist' for 1846, p. 1331.

The beak is dark brown at the point, pale reddish-brown at the base; irides dark brown; from the beak to the eye a dark brown streak; over that, over the eye and over the ear-coverts, a broad pale brown streak, with a narrow darker one along the middle line of the posterior part; forehead and top of the head rich dark brown, not divided along the middle by a pale brown streak, as in the Great Snipe and Common Snipe; back of the neck greyish-brown, varied with dusky-brown; back rich dark brown with green and purple reflections; interscapulars and scapulars nearly black, tipped with reddish-brown, both sets having broad external lateral margins of rich buffy-yellow: wing-coverts dusky-black, edged with pale brown; primary quill-feathers dusky-black; secondaries the same, but ending in a white point; tertials brownish-black, spotted and streaked with rich reddish-brown; upper tail-coverts brown, edged with buff; tail-feathers twelve, greyish-black margined with brown: the central ones elongated; cheeks, chin, and neck, greyish-brown, spotted with darker brown; breast, belly, and vent white; legs and toes dark greenish-brown; claws black.

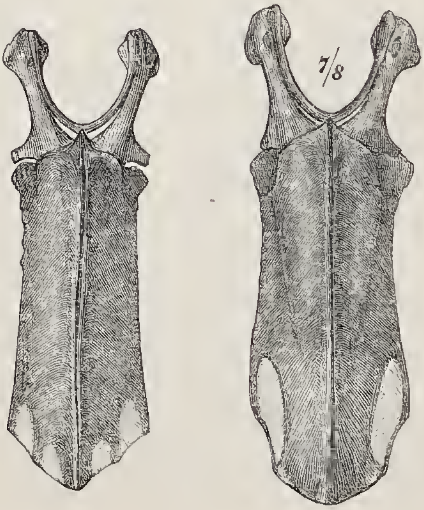
The whole length is eight inches to eight inches and a half; the length of the beak one inch and a half; from the carpal joint to the end of the first quill-feather, which is the longest, four inches and three-eighths.

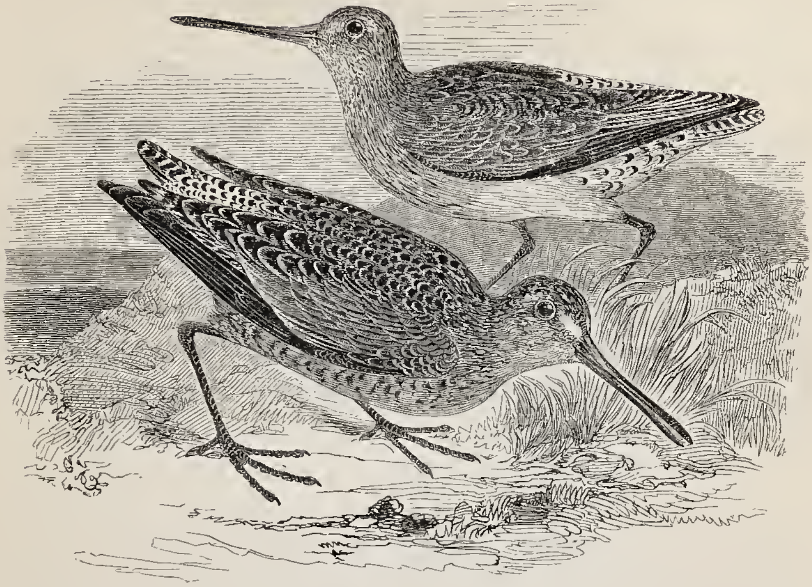
Females are on the average a trifle larger in size than the males, but not so bright in their colours. In the plumage of winter the reddish-brown parts are more inclined to ash-grey.

Young birds have not the brilliant green and purple reflections observable in old birds. The nestling is of a still richer brown than that of the Common Snipe already figured, and the bill is shorter, higher, and broader at the base.

Varieties in this species are very uncommon, but a melanism is recorded by Mr. F. Bond (Zool. 1862, p. 8000) as having been shot near Staines.

The differences in the emargination of the breast-bone in the Jack, and in the Common Snipe, are shown below.





Macrorhamphus griseus (Gmelin *).

THE RED-BREASTED SNIPE.

Macrorhamphus griseus.

Macrorhamphus, *Leach* †.—Beak long, straight, rounded, rather slender in the middle, the tip dilated, slightly incurved and rugose. Nostrils lateral, basal. Legs with four toes, the outer toes connected at their base by a membrane; hinder toe touching the ground only at the tip; lower part of the tibia naked. Wings long and pointed. Tail-feathers twelve in number.

The Red-breasted or Brown Snipe is an American species which was first made known as a straggler to Britain by Colonel Montagu, who described it in his Ornithological Dictionary, and gave a figure of it in its winter plumage in his Supplement. This example, which was killed in Devonshire in the month of October, is preserved in the British Museum. According to Dr. Edward Moore (Mag. Nat. Hist. 1837, p. 321), a second Devonshire example is in the collection of Mr. Drew. A young bird was shot near Carlisle on the 25th September, 1835, and passed into the collection of the late T. C. Heysham.* A fourth example, killed at Yarmouth in October, 1836, became the property of the Rev. Leonard Rudd, residing in Yorkshire, who did the Author the favour to bring his bird to London that he might see it. Mr. J. H. Gurney has recorded a male, now in his collection, which was obtained near Yarmouth in October, 1840 (Ann. and Mag. Nat. Hist. vi. p. 236).

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* *Scolopax grisea*, Gmelin, Syst. Nat. i. p. 658 (1788).

† Cat. Mamm. and Birds Brit. Mus. p. 31 (1816).

On the 9th October, 1845, a male, changing like the other October birds from summer to winter plumage, was shot by Mr. Rising of Hornsey, in whose collection it still is, a companion bird escaping. Mr. Harting records (B. of Middlesex, p. 195) one in the collection of Mr. F. Bond, killed some years ago on the banks of the Thames near Battersea; and one in his own collection shot on the Brent in October, 1862. One is stated to have been killed previous to 1857, near Kingsbridge, Devonshire (Zool. p. 5791), and on the 3rd October of that year, Mr. Augustus Pechell shot an example at St. Mary's, Scilly, which is in the collection of, and was recorded by, the late Mr. Rodd (Zool. p. 5832). In 1873, a bird answering in description to this species was obtained at Southport, Lancashire (Zool. s.s. p. 4341). On the 15th of August, 1882, Mr. Cordeaux obtained an adult in the flesh, shot in north-east Lincolnshire (Zool. 1882, p. 392) which closes for the present the list of authenticated occurrences of this straggler in England.

In Scotland, according to Mr. R. Gray (B. West Scot. p. 314), an example of the Red-breasted Snipe was shot near Largo, in September, 1867; and he also states that a specimen exhibited at a meeting of the Natural History Society of Glasgow, on 28th December, 1869, was killed 'some years ago' in Lanarkshire; but he makes no allusion to one identified by Mr. Thomas Edward (Zool. p. 6269), from a wounded bird which subsequently recovered and flew away, near Banff on the 25th September, 1858, and it is possible that he may not believe in the correctness of its identification. A similar doubt has precluded the insertion in this Edition of some other recorded occurrences.

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* Mr. C. M. Adamson ('Some More Scraps about Birds,' p. 67) says that when he last saw this specimen, prior to the sale of Mr. Heysham's collection, it was in a most dilapidated condition, the head being separated from the body, and it was probably thrown away; at all events it is not the same as the bird sold on 11th May, 1859, Lot 145, which was in summer plumage.

Under the mistaken impression that this bird had been killed in Sweden, and that it was also a new species, it was described by Nilsson under the name of *Scolopax paykulli* (Orn. Swec. ii. p. 106), an error he subsequently corrected. In France it has several times been obtained in Picardy and Normandy; and M. Taczanowski states that there are three examples in the Museum of Warsaw, from Cape Tschukotsk in North-eastern Siberia. Its occurrence as a straggler to the south of Greenland in 1854 has been recorded by Reinhardt.

This bird is very common in the United States of America, and has frequently been described by the principal American naturalists. It was formerly considered to be a true Snipe, but the bill is intermediate in its length between that of the true Snipes and the Sandpipers, and some other peculiarities, in which it also differs from both, as close examination will show, induced Dr. Leach to confer upon it the generic distinction *Macrorhamphus*, by which it is now generally known. Audubon, in his account of this species, says, that the Creoles of Louisiana call it *Bécassine de mer*, an appropriate name for the bird, since the beak is in structure that of a Snipe; while the habits and great seasonal change of plumage, are those of the marine Sandpipers. The English names given to this bird are not so happily chosen, being of more personal application. It has been called Red-breasted Snipe, Brown Snipe, and Grey Snipe; but the bird is only red during summer, brown in the autumn, and grey in winter.

The Red-breasted Snipe, as it is called by Wilson on account of the prevailing colour of its summer plumage, "arrives on the sea-coast of New Jersey early in April; it is seldom or never seen inland; early in May it proceeds to the north to breed, and returns by the latter part of July or beginning of August. During its stay it flies in flocks, sometimes very high, and has then a loud and shrill whistle, making many evolutions over the marshes; forming, dividing, and reuniting. They sometimes settle in such numbers, and so close together, that eighty-five have been shot at one discharge of a musket. They frequent the sand-bars and mud-flats at low water in search of food; and being less suspicious of a boat than of a person on shore, are easily approached by this medium, and shot down in great numbers." In autumn and winter it passes southwards through the Southern States to Central and South America as far as Chili on the west and Brazil on the east, visiting Cuba regularly, and the Bermudas more rarely. Until recently its breeding-places were only known, in a general way, to be in the Fur Countries and the vicinity of the Arctic circle, but of late years nests have been found in the Anderson River district by Mr. R. Macfarlane, collector to the Smithsonian Institution, and by Mr. Dall in Alaska. The eggs were found in June, in slight depressions of the ground in the tussocks of the marshes, the normal complement being four; they present the usual character of eggs of *Gallinago*, being of a brownish-olive with diffused spots of chocolate and umber-brown, and measure on the average 1·62 by 1·12 in. Dr. Elliott Coues, from whom these details are taken, says that this species is so tame that it affords no sport; if disturbed it merely utters a short *weet* on taking flight, and soon settles down again by the side of the water in which it seeks its food; and when taken off its feet by the tide, or wounded, it swims readily. Its food consists of small insects, worms, and marine bivalve mollusca.

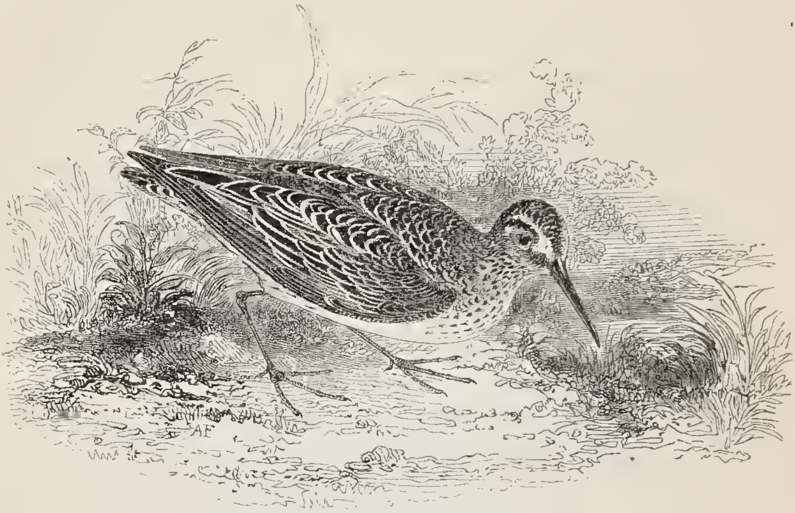
A form of this Snipe has been distinguished by the name of *M. scolopaceus*, but according to Dr. Elliott Coues it is not even entitled to rank as a variety. Mr. Ridgway, who has carefully considered the question (Bull. Nutt. Orn. Club, 1880, pp. 157–160), says that *M. griseus* predominates on the Atlantic coast of the United States, no specimens having been seen from west of the Alleghanies; whereas *M. scolopaceus* occurs principally in the western portions of the continent, crossing it diagonally from Alaska to the Mississippi valley and the West Indies; but casual along the Atlantic coast of the United States.

In the summer or breeding plumage, the beak is reddish-brown, darker at the point than at the base; the irides reddish-hazel; cheeks, top of the head, and back of the neck, pale chestnut-brown, streaked with black; upper part of the back, the scapulars and tertials, nearly black, edged and streaked with bright yellowish-chestnut; wing-coverts and quill-feathers dusky ash-brown; the lower part of the back white; upper tail-coverts white, spotted with black; tail-feathers barred alternately with black and white, of which the black bars are broader than those which are white; sides and front of the neck, the breast and belly, reddish-chestnut, spotted and barred with black; sides, flanks, vent, and under tail-coverts, white, tinged with red, and spotted with black; legs and toes greenish-brown, the claws black.

From this state these birds pass, during autumn, through various shades of dark brown and ash-brown, to the ash-grey plumage of winter; when the cheeks, head, and neck are ash-brown, varied with darker brown; scapulars, wing-coverts, and tertials, dusky ash-brown, margined with greyish-buffy white; the lower part of the back, upper tail-coverts, wing, quill, and tail-feathers as in summer; breast and belly nearly white; flanks and under tail-coverts dull white, spotted with black.

The whole length of the bird is from ten to eleven inches, depending on age and sex; the beak also varies in length from two inches to two and a half inches; from the carpal joint to the end of the first quill-feather, which is the longest in the wing, five inches and five-eighths.

LIMICOLÆ. *SCOLOPACIDÆ.*



Limicola platyrhyncha (Temminck[*]).

THE BROAD-BILLED SANDPIPER.

Tringa platyrhyncha.

Limicola, *Koch*[†].—Bill much longer than the head, nearly as broad as high at the base, very flat and wide up to the tip, where it is gradually rounded to an obtuse point, with the terminal portion slightly decurved; nostrils oval, oblique, placed in a depressed membrane. Wings long, pointed, the first quills feather the longest; inner secondaries long and pointed. Tail moderate, doubly emarginate. Legs rather short, slender, bare on the lower part of the tibia; tarsus scutellate; the three anterior toes long and slender, slightly webbed at the base; the hind toe moderate.

The Broad-billed Sandpiper, which is distinguished from other species by the character which its name suggests, was first made known as a visitor to the British Islands by the late Mr. Hoy, who recorded an example shot on the muddy flats of Breydon Water, Norfolk, on the 25th May, 1836 (Mag. Nat. Hist. x. p. 116), in company with some Dunlins and Ring-plovers.[‡] Since that date a second specimen, a male in breeding plumage, now in Mr. J. H. Gurney's collection, was obtained on Breydon, May 25th, 1856 (Zool. p. 5159), and a third, in Mr. Stevenson's collection, a male assuming its summer plumage, was killed on Breydon the 23rd April, 1868. Mr. William Borrer, of Cowfold, Sussex, possesses an example nearly in winter plumage, obtained near Shoreham in October, 1845 (Zool. p. 1394). In April, 1863, a bird now in the collection of Sir H. S. Boynton was shot on Hornsea Mere, Yorkshire;* and this closes for the present the list of occurrences of this rare visitant in England. In Ireland a specimen was obtained in Belfast Bay, on the 4th October, 1844, as recorded by Thompson (Ann. Nat. Hist. xv. p. 309).

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[*] *Tringa platyrincha* (misprint), Temminck, Man. d'Orn. p. 398 (1815).

[†] System der baierischen Zoologie, i. p. 316 (1816).

[‡] Mr. Stevenson states (B. Norfolk, ii. p. 360) that there is no evidence of this specimen ever having been in Mr. Hoy's possession, nor has he been able to ascertain what became of it.

It is quite possible that this straggler may be of more frequent occurrence than is supposed, but it is evident that the British Islands lie outside its ordinary routes of migration. Yet it breeds no further off than the fells of Norway and Sweden, which constitute its summer head-quarters; and on its way to and from these, it visits the coast line and the inland waters of Denmark, Germany, France, and Switzerland. As yet its presence has not been noticed in the Iberian Peninsula, but in parts of Italy, although of irregular occurrence, it is sometimes numerous. It is said to visit the African shores of the Mediterranean, and there is tolerably good evidence that it goes to Egypt as a straggler; it has occurred in Madagascar, but otherwise its winter distribution as regards the Ethiopian region is unknown. From Finland and Northern Russia, where it also breeds, it descends to the shores of the Black Sea, and occasionally to the Kirghiz steppes, in the neighbourhood of the Caspian; but it cannot as yet be traced to Asia Minor. Nor has it yet been recorded from Turkestan, but Severtzoff obtained a single specimen at Kara-Kul, in the Pamir range, on August 17th (Ibis, 1883, p. 75); and at Kurachee, and along the Mekran and Sindh coasts, it is decidedly common in winter. It is not recorded from any inland district of India, but both young and adults obtained by Mr. Blyth at Calcutta are in the British Museum, and it is a rare straggler to Ceylon. It is very abundant on the muddy delta of the Irawaddy; Tenasserim, the Andaman Islands, and the Philippines are also visited by it, and as Reinwardt procured it in Java, it probably occurs in other parts of the Malay Archipelago. Passing northwards, there seems to be an absence of continuity in the range of the Broad-billed Sandpiper as regards Western Siberia, for Mr. Seebohm did not meet with it on the Arctic portion of the Yenesei, nor did Dr. Finsch or Dr. Theel in the Altai or on the Ob; but its occurrence on the eastern shores of Lake Baikal is substantiated by Dybowski, and on the Sea of Okhotsk by Middendorff. In Japan Messrs. Blakiston and Pryor obtained four specimens, one of which the Editor has examined, in Mr. Seebohm's collection, and finds it identical with European specimens; and at Shanghai, and on the Island of Formosa, the late Mr. Swinhoe obtained several examples. These have been pronounced by Mr. H. E. Dresser to be specifically distinct from the western form, and he has accordingly separated the bird from Eastern Siberia and China under the name of *Limicola sibirica* (P. Z. S. 1876, p. 674). In winter plumage he admits that the two forms cannot with certainty be distinguished, but in three eastern specimens which, as he states, were all that he had in summer dress, he found that the feathers on the crown and entire upper parts were very broadly margined with bright rufous, giving this colour extreme prominence, whereas in western birds in breeding plumage the general coloration of the upper parts is darker and the margins of the feathers are paler. To Mr. Harting, Col. W. V. Legge, and the Editor, after examination of this scanty series, the alleged differences do not appear to warrant specific distinction; and to the latter the Chinese specimens, which were obtained in April, seem to be birds of the previous year, assuming their first spring plumage, but not the darker feathers of the fully adult stage. A specimen from Bohol in the Philippines, submitted to Mr. Dresser (P. Z. S. 1878, p. 712), is referred to *L. platyrhyncha*.

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* Cordeaux, 'B. Humber,' p. 135; W. E. Clarke, 'Yorks. Vertebs.' p. 74.

The late Mr. Richard Dann, during his visits to Norway and Lapland, ascertained the breeding-grounds of this species, and succeeded in obtaining the old birds in their breeding plumage, their eggs, and a young bird when just able to fly. Mr. Dann most liberally presented the Author with the eggs, the young bird, and an old one, to which he added a long series of notes on the localities frequented during the breeding-season, by a large proportion of those birds which only visit this country for the winter. Mr. Dann's name, as well as information obtained from him, has already appeared, on many occasions, in this history, and his notes in reference to the Broad-billed Sandpiper are to the following effect:—

"This Sandpiper is by no means uncommon during the breeding-season in Lulea and Tornea Lapmark, frequenting grassy morasses and swamps in small colonies, generally in the same places as those frequented by the *Totanus glareola*, our Wood Sandpiper. It breeds also at Fokstuen on the Dovre Fjeld mountains, about three thousand feet above the level of the sea, in Norway, where it arrives at the latter end of May. On its first appearance it is wild and shy, and similar in its habits to the other species of the genus, feeding on the grassy borders of the small pools and lakes in the morasses. On being disturbed it soars to a great height in the air, rising and falling suddenly like the Snipe, uttering the notes *two woo*, which are rapidly repeated. As the weather becomes warm its habits totally change, skulking and creeping through the dead grass, and allowing itself to be followed within a few yards, and when flushed dropping again a short distance off. It seems to lay its eggs later than others of this tribe generally. I found the eggs not sat upon on the 24th of June, and the last week in July the young were unable to fly; a period when all the other Sandpipers are on the move south. The eggs were of a deep chocolate colour, and its nest, like that of the Snipe, was on a hummocky tuft of grass. Although I found the young only half fledged the last week in July, and hunted the morasses very carefully, I never flushed or saw a single old bird, yet undoubtedly they must have been there, so difficult is it at that period to get them on the wing, and so entirely different from their habits in the spring. They are undoubtedly numerous, but from their very small size and hiding habits are difficult to be discovered, added to the almost impassable nature of the swamps they frequent. There were several small colonies of them in different parts of the extensive swamp at Fokstuen; I procured five specimens there, and might have obtained as many more, had I desired it; I also procured one nest with four eggs in it."

This account, which was copied in Hewitson's 'Eggs of British Birds,' with figures of the eggs taken by Mr. Dann, was supplemented in the 3rd edition of that work (ii. p. 360) by notes from the late Mr. John Wolley, with illustrations of two remarkably beautiful specimens from the series obtained by the latter at Muoniovara, in Lapland; and since 1854, numbers of these once rare eggs have found their way into collections. As already stated, they are often of a deep chocolate-brown, or of a pale brown ground-colour mottled with umber, but they soon fade; the measurements are about 1·2 by ·9 in. Mr. Mitchell, who found it nesting on the Dovrefjeld, says that the lining of the nest is suited to the colour of the eggs; the darkest ones being laid on the brown withered leaves of the mountain willow, and the lighter ones on grass.

Mr. Collett says that, when searching for food, the Broad-billed Sandpipers hurry hither and thither, with nodding head and bill pointing obliquely to the ground. If flushed, they will utter a few mellow, flute-like tones, at intervals mingled with a harsher note. From the stomachs he took the remains of insects only, *Harpalini*, *Bembidia*, and divers larvæ.

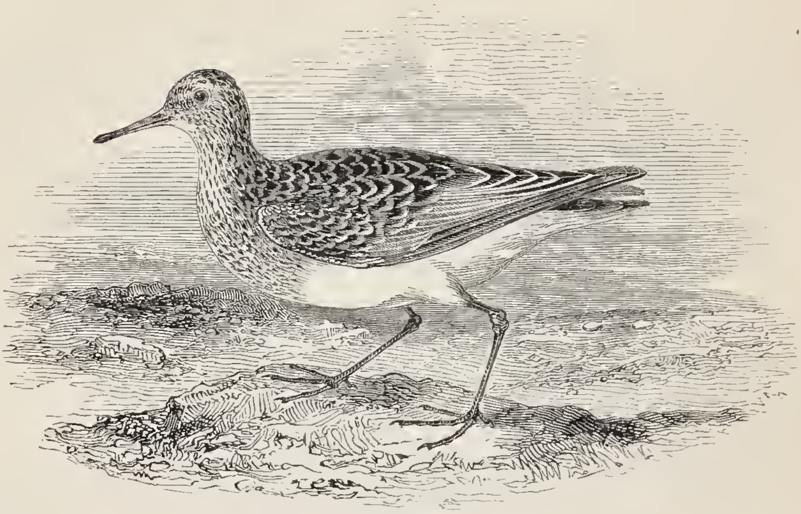
The adult bird, in the breeding-season, has the beak, which is one inch and one-sixteenth in length, dark brown at the point, inclining to reddish-brown at the base; irides brown; from the base of the beak to the eye a dark brown streak; over that and the eye a white streak, with a brown central longitudinal line; top of the head brownish-black, slightly varied with greyish-white, and tinged with ferruginous; interscapulars nearly black with rufous edges; scapulars, wing-coverts, lower part of the back, and the tertials, black, the feathers having broad margins of buffy-white or rufous; the primary and secondary quill-feathers blackish; the shafts white; upper tail-coverts black with rufous edges; the two middle tail-feathers nearly black, longer than the others, pointed and margined with rufous: the others ash-grey, margined with buff-colour; chin nearly white, with minute dark specks; sides and front of the neck and the upper part of the breast greyish-white, varied with black spots and tinged with buffy-red; belly, vent, and under tail-coverts, white; legs, toes, and claws, greenish-black.

The whole length of the adult birds is six and a half inches; wing, from the carpal joint to the end of the first, which is the longest feather, four and a quarter inches; length of the tarsus three-quarters of an inch. The female appears to exceed the male in size, but the difference is very slight.

The young bird resembles the parent in its plumage at this season, but the feathers of the upper parts are somewhat more broadly margined with greyish-white.

Its winter plumage closely resembles that of our Dunlin at the same season. The beak is dark brown, almost black; from the base of the beak to the eye a brown streak, over that a broad one of white; top of the head, nape, back, all the wing-coverts and tertials ash-grey, the centre of each feather darker and the margin lighter; primaries black; chin, neck in front, and all the under surface, pure white; legs blackish-brown.

In the downy nestling the under parts, forehead and cheeks are greyish-white, with a tinge of buff on the throat; a dark central streak from the base of the bill to the crown, another from the base of the upper mandible to the eye on each side, and a similar but narrower streak from the lower mandible backwards; crown and upper parts nearly black, tinged with rufous and spotted with white.



TRINGA MACULATA, Vieillot.[*]

THE PECTORAL SANDPIPER.

Tringa pectoralis.

TRINGA, *Brisson*[†].—Beak rather longer than the head, sometimes decurved, rather flexible, compressed at the base, depressed, dilated, and blunt towards the point, both mandibles grooved along the sides. Nostrils lateral, placed in the membrane of the groove. Legs moderately long, slender, lower part of tibia naked; three toes in front, divided to their origin; one toe behind, small, and articulated upon the tarsus. Wings moderately long, pointed, the first quill-feather the longest.

THE first example of this American Sandpiper which was recorded as a straggler to our shores, was killed on the 17th October, 1830, on the borders of Breydon Water, near Yarmouth in Norfolk, so celebrated for the numerous rare birds which have at different times been observed and shot on its banks and waters. The person who killed it remarked that it was solitary, and its note was new to him, which induced him to shoot it. The bird, on dissection, proved to be a female, and was preserved by the late Mr. J. Harvey, of Yarmouth, as a curious variety of the Dunlin, with some doubts as to whether it might not be a new species. It was detected by the late Mr. J. D. Hoy (Mag. Nat. Hist. i. p. 116), who, believing it to be undescribed as a British bird, sent it up to the Author for inspection. Mr. Audubon being then in London, the bird was exhibited to him, as a good authority for American species, and he immediately confirmed the previous notion that the bird was an example of the Pectoral Sandpiper of America.*

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[*] Nouv. Dict. d'Hist. Nat. xxxiv. p. 465 (1819). The name of *T. pectoralis*, Say (Long's Exped. i. p. 171), was not conferred till 1823.

[†] Ornithologie, v. p. 177 (1760). Gould (Hbk. B. Australia, ii. p. 254) placed the present species and *Tringa acuminata* (Horsf.) in a new and undefined genus, *Limnocinclus*.

Since that date several well-authenticated specimens have been obtained in the same county. On the 30th September, 1853, a female, apparently a bird of the year, was killed near Yarmouth, and recorded (Zool. p. 4124) by Mr. J. H. Gurney, in whose collection it now is. On the 16th September, 1865, one killed at Caistor was brought to Mr. Stevenson in the flesh, and a female, which was preserved for the Lynn Museum, was netted on the 9th January, 1868, in Terrington Marsh (B. Norfolk, ii. p. 368).

On the 27th May, 1840, the late D. W. Mitchell, of Penzance, shot a specimen of this Sandpiper while it was resting on some seaweed within a few yards of the water, on the rocky shore of Annet, one of the uninhabited islands at Scilly. On the following day another example was seen, but became so wild, after an unsuccessful shot, that it took off to another island, and escaped altogether.

Another, as recorded by Mr. W. P. Cocks (Naturalist, 1851, p. 137), was obtained at Gyllyngvase East, near Falmouth. In September, 1870, the Rev. J. Jenkinson, while on a visit to the Scilly Islands, shot a bird of this species, which he brought to the late Mr. E. H. Rodd, who a few days later had an opportunity of examining another example secured at the same place; and before a week had elapsed he received another from his friend Mr. Augustus Pechell (B. of Cornwall, p. 104). In Devonshire two were obtained at Braunton Burrows, on the 12th September, 1871 (Zool. s.s. pp. 2808, 2909).

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* Dr. Bree, in his account of the collection of the late Mr. Hoy (Field, 1867, xxx. p. 466), says that this specimen is not to be found there.

Passing eastward, Mr. Harting has recorded (Handbk. Brit. B. p. 141) a Pectoral Sandpiper obtained at Eastbourne, September, 1870. At Aldeburgh, Suffolk, one is stated by Mr. Hele to have been killed on the 5th October, 1870 (Field, 15th Oct. 1870). In Yorkshire one is stated to have been shot at Teesmouth in August, 1853, and another at Redcar on the 17th October of the same year (Naturalist, 1853, p. 275); in Durham, according to Dr. Edward Clarke, one was killed near Hartlepool in October, 1841; and Mr. John Hancock has a specimen said to have been shot near Bishop Auckland. In Northumberland, the only authenticated example was obtained on Whitley sands on the 27th June, 1853, by Mr. Robert Duncan (Zool. p. 4808), and is now in possession of Mr. C. M. Adamson: it is in summer plumage.

In Scotland an immature bird was shot at Don-mouth, Aberdeenshire, on the 2nd October, 1867, as recorded by Mr. R. Gray (B. West Scot. p. 321). Lastly, one was shot by Sir G. Leith Buchanan, Bart., near Loch Lomond, on the 24th November, 1882, during very boisterous weather; and the correctness of its identification has been confirmed by Mr. Harting (Zool, 1883, p. 177), to whom the specimen was very properly submitted. Some other examples on record are either suspected of being, or are known to be, erroneously identified; and, in at least one instance, a foreign specimen has been passed off as British-killed.

On the Continent of Europe its occurrence has not yet been recorded, nor does it appear to have crossed from the American side of Behring's Straits to Asia, although its Old World representative, *Tringa acuminata*, does occasionally visit Alaska. It is true that Gould quotes Swinhoe as stating that the Pectoral Sandpiper was abundant in Northern China, and also at Amoy, in August, but Swinhoe subsequently stated (P. Z. S. 1871, p. 409) that his Chinese birds were *T. acuminata*. In Greenland it is stated by Reinhardt (Ibis, 1861, p. 11) to have been met with on three occasions.

In North America, where the Pectoral Sandpiper is also known as the "Meadow Snipe," "Grass Snipe," and "Jack Snipe," it is of general distribution from Hudson's Bay to Alaska in summer, and is supposed to breed in the arctic and sub-arctic regions of that continent, although a description of authenticated eggs does not as yet appear to be available.* In autumn it migrates southwards, and is common throughout the United States down to the extreme south; its winter range extending to Bermuda, the Bahamas, the West Indies, Mexico, Guatemala, Colombia, the east coast from Brazil to Patagonia, Bolivia, Peru, and Chili. Dr. Elliott Coues (B. of North-West, p. 486) says of it that, "unlike most Sandpipers, it does not flock, at least to any extent, being oftenest found scattered singly or in pairs. In the United States it is chiefly, if not wholly, a bird of passage; for, though some may winter along our southern border, and others breed along the northern tier of States, such probabilities require to be confirmed. Its winter range is very extensive, yet some individuals may be found in the Middle States as late as November. I found it in July along the forty-ninth parallel, where it probably breeds, though I did not ascertain the fact. It occurred sparingly about pools on Turtle Mountain, in company with *T. minutilla*. It is a very abundant bird in summer in Labrador, where it frequents low, muddy flats, laid bare by the tide, and the salt-marshes adjoining. When they arise from the grass to alight again at a little distance, they fly in silence or with a single *tweet*, holding the wings deeply incurved; but when suddenly startled and much alarmed, they spring quickly, with loud, repeated cries, and make off in a zigzag, much like the Common Snipe. Sometimes, gaining a considerable elevation, they circle for several minutes in silence overhead, flying with great velocity, perhaps to pitch down again nearly perpendicularly to the same spot they sprang from. The southward migration begins in August, and is usually completed by the following month."

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* In a paper by Major H. W. Feilden (Zool. 1879, pp. 1–9), on the Natural History of Prince Albert Land, from the Medical Returns of the late Surgeon R. Anderson, of H.M.S. 'Enterprise,' birds and eggs referred with a ? to this species are stated to have been obtained at Winter Cove in 1852.

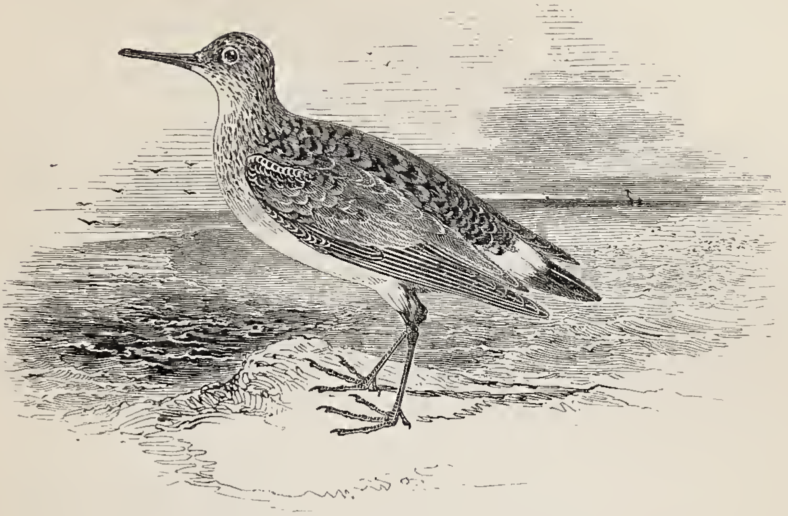
Nuttall says that these Sandpipers feed on small coleoptera, larvæ, and the common green *Ulva latissima*, as well as some species of *Fucus*, or seaweed, on which they become very fat. The stomachs of some of those killed in Britain contained small seeds, the remains of a few insects, small crustacea, and coarse sand.

The Author was indebted to Mr. Audubon for the specimen of the Pectoral Sandpiper from which the figure was drawn and the following description taken.

The beak is dark brown at the point, greenish-brown at the base; irides dark brown; feathers of the top of the head dusky-brown, with darker central streaks, and tipped with rufous; the back of the neck, the wing-coverts, the back, and the tertials dark brown, with lighter-coloured margins; primaries dusky-black, the shaft of the first white; secondaries dusky-black, each with a narrow edge of white; rump, and upper tail-coverts, and the two middle tail-feathers, which are the longest, black; the rest of the tail-feathers ash-brown tipped with yellowish-white; chin white; the cheeks, sides and front of the neck, and the upper part of the breast, greyish-white tinged with brown and streaked with dusky-black in the line of the shaft of each feather; lower part of the breast, belly, and under tail-coverts white; legs and toes yellowish-brown; claws black.

The whole length varies from eight and three-quarters to nine and a quarter inches: the wing from the carpal joint to the end of the first quill-feather, which is the longest, five inches and three-eighths to five and three-quarters. Weight of the Don-mouth specimen, two and a quarter ounces.

The principal distinction between the adult in breeding-dress and the immature, consists in the markings of the feathers on the breast, which are arrow-headed in the former, but merely streaked down the centre of each feather in the latter.



TRINGA FUSCICOLLIS, Vieillot.*

BONAPARTE'S SANDPIPER.

Tringa Schinzii.

BONAPARTE'S SANDPIPER is another American species which was first recorded as occurring in the British Islands by the late Mr. Gould, who described and figured a specimen killed near Stoke Heath, which is in the collection of Lord Hill. He says, "We have compared the individual from which our figure is taken with others killed in America, between which we could discover no difference; its shorter bill and white rump will at all times serve to distinguish it from the other European members of the group" (B. Europe, v.).

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* Nouv. Dict. xxxiv. p. 461 (1819) Especial reference is there made to the white upper tail-coverts characteristic of this species. In former Editions of this work the name of *Tringa schinzi,* by which Bonaparte (Ann. Lyc. N. H. New York, ii. p. 317, 1828) designated this species, was employed; but as that name had already been conferred by Brehm (Beiträge Vögelk. iii. p. 355, 1822) on a small European race of the Dunlin, it must be discarded. Bonaparte, however, was the first to describe the American bird, and the fact is appropriately recognized in its trivial name.

An example in the Museum at Belfast, there is reason to believe, was killed in Ireland. In October, 1846, two adults, male and female, were procured in Hayle estuary, about seven miles from Penzance, and were recorded by the late E. H. Rodd, in whose collection they are preserved (Zool. p. 1554). In the second week of October, 1854, the same naturalist chronicled (Zool. p. 4512) an example obtained at Trescoe in the Scilly Islands; and in the second week of October, 1870, he obtained another shot in the same locality. On the 29th of the same month Mr. Vingoe, of Penzance, showed him another which had just been shot at the Lizard; and it would appear that a small flock must have arrived on our shores about that time, for in the first week of that same November four individuals, two of which are now in the collection of Mr. Cecil Smith, and one in that of the Rev. Murray A. Mathew, were shot at Instow, North Devon; another being obtained on the 12th of the month at Eastbourne, Sussex (Zool. s.s. p. 2442). In the latter county one had already been recorded (Zool. p. 6537), shot near Bexhill, on 8th October, 1857, and is now in the collection of Mr. J. H. Gurney. Mr. H. E. Dresser possesses a mounted specimen, stated on the label at the back of its case to have been shot at Kingsbury Reservoir, Middlesex, in 1856, by Mr. Goodair. There are probably some unrecorded British-killed examples, and owing to the similarity of this species in its winter-dress, to the Dunlin at the same season, it has no doubt often escaped recognition. Its occurrence on the Continent of Europe does not as yet appear to have been authenticated, for, as already stated, the *T. schinzi* of Brehm and of other ornithologists is merely a variety of the Dunlin.

In Greenland, Bonaparte's Sandpiper was believed by Holböll (according to Dr. Paulsen) to breed near Julianshaab, where small flocks of both young and old birds have been observed in August; and a very young bird was obtained at Nenortalik in 1835; one, changing to winter plumage in 1840; and three in 1841.* There can be little doubt that its breeding-grounds are in the northern portions of the American continent, and eggs purporting to belong to this species have been sent from Labrador and Hudson's Bay, but as yet no authenticated specimens are known to the Editor.* Richardson met with Bonaparte's Sandpiper on the Saskatchewan, and on the 22nd May Dr. Elliott Coues found it migrating northward in flocks on the Republican Fork of the Kansas River, so that it probably ranges over the intermediate ground. He describes it as a very abundant bird along the whole Atlantic coast from Labrador in July, August, and September, to the majority of the States as far as Florida, but it does not appear to visit Alaska, or even to pass west of the Rocky Mountains. It pushes its migrations southwards to the West Indies, Central America, and Colombia, Brazil, the River Plate States, the Falkland Islands, and the Straits of Magellan; and on the Pacific side it has been obtained in Chili and Peru.

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* Newton, Manual Arctic Exped. p. 103 (1875).

Dr. E. Coues says that he frequently observed birds of this species on rocky shores covered with seaweed, and moist with the falling spray; and that of all Sandpipers it is the most gentle and confiding. When startled, they emit a soft, low *weet*, different from the note of any other Sandpiper, and fly off in a very compact flock.† They fly rapidly, in a very unsteady manner, alternately showing the upper and under part; and they may always be recognized, in flight, by the conspicuously white upper tail-coverts. They usually associate with the Semipalmated Sandpipers and the Ring-plovers, and, in common with other small species, are known by the general name of 'peeps.'

The Author was indebted to the kindness of Mr. Audubon for the specimen of this Sandpiper, from which the drawing at the head of this subject and the following description were taken. The bird is believed to have been killed in spring. The beak is straight and nearly black; the irides brown; the top of the head and back of the neck ash-brown, streaked with dusky; scapulars and feathers of the back ash-brown, some assuming a deep black colour in the centre and becoming rufous on the edges; wing-coverts ash-brown, edged with greyish-white; primaries dusky-black with white shafts; secondaries dusky-brown with minute tips of white; tertials dusky-brown, margined with ash-grey; upper tail-coverts white; two middle tail-feathers pointed, longer than the others, and dark brown; the rest ash-brown; chin white; cheeks, sides of the neck, and upper part of the breast, greyish-white, speckled with dusky; axillary plume white; belly and under tail-coverts also white; legs, toes, and claws almost black, tinged with green.

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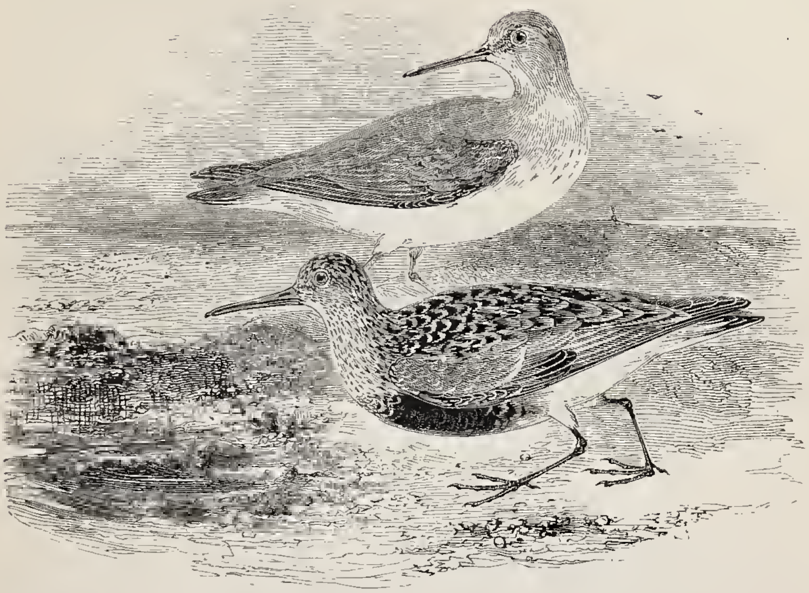
* The late Surgeon Anderson, of H.M.S. 'Enterprise,' when at Winter Cove, Prince Albert Land, in 1852, obtained several birds and two eggs, which he brought to England (Zool. 1879, p. 7). L. Kumlien (Bull. U. S. N. Mus. No. 15, p. 86) says that this species breeds on the shores of Cumberland Sound.

† Mr. Rodd says of the Cornish birds that the note was remarked to be shorter and sharper than that of the Dunlin.

The whole length of the adult male is seven inches and a half. From the carpal joint of the wing to the end of the first quill-feather, which is the longest, four inches and three-quarters. The female is a trifle larger and more richly coloured. In its winter plumage, which is grey, Bonaparte's Sandpiper may be distinguished from the Dunlin by its conspicuously white rump, by the total absence of any black spots on the breast, and by a more defined white eye-streak.



Tringa alpina, Linnæus.*

THE DUNLIN.

Tringa variabilis.

This species, known all round our coast by some one or more of the following names:—viz., Dunlin,† Purre (Sir Thomas Browne writes it, Churr), Stint, Ox-Bird, Sea Snipe, &c., is the most numerous of all the Sandpipers frequenting our shores and tidal rivers, and may be seen there throughout the year, except for a short time at the breeding-season; nor is it very often seen inland at any other period. Even in summer, however, flocks of birds of the previous year which have not attained the breeding plumage may be observed on the Spurn in Yorkshire, and in similar suitable localities on our coasts. During autumn, particularly when the new broods come down from their summer abodes and are joined by the parent birds, immense flocks of Dunlins may be seen busily employed close to the edge of the sea, searching and probing for the minute animals upon which they feed. Frequenting sandy flats and bars that project into the sea, they are observed to be incessantly upon the move, shifting their ground perpetually, running nimbly along, or taking short flights from place to place, frequently wading to follow the aquatic insects, worms, mollusca, and the smaller thin-skinned crustacea which are put in motion by every receding wave. If disturbed, the whole flock take wing together, and wheeling along in half circles near the edge or the surface of the water, each bird exhibits alternately a dark or light appearance to the observer, as the upper or under side of its body happens to be turned towards him.

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* Syst. Nat. Ed. 12. i. p. 249 (1766).

† In the 'Durham Household Book,' 1534, the word is spelt 'Dunling,' and Mr. Harting suggests (Zool. 1881, p. 444) that it may be a diminutive, like Gosling, Duckling.

During winter many are shot for the table, on various parts of the coast, and are considered to be tolerably good eating. On the Wash in winter considerable numbers of this and other species are taken on dark nights in nets stretched on poles about high-water mark. In the autumn of 1836 a few were sent to the London market from Lincolnshire, where they had been fatted in confinement with some Ruffs. These small birds, from abundance of nutritious food, had increased beyond their usual size, being very fat, delicately white in colour, and by the party for whom they were purchased, and by whom the birds were eaten, were said to be of excellent flavour. The trail should be removed as soon as possible, to obviate the bitter flavour communicated by the gall-bladder. In the Household Books of the L'Estrange family, and of the Dukes of Northumberland, "Styntes" seem to have varied from a dozen to six for a penny, but several of the smaller species were comprised under this name.

Before going further, it may be well to state that the Dunlin is subject to considerable variation in size, length of bill, and colour. Professor Baird considers (B. N. Amer. p. 719) that American birds are specifically distinguished from those of the Old World by their larger size and much longer bill. To this Mr. Harting adds (P. Z. S. 1871, p. 115), that in examples in summer plumage the American birds are further characterized by the prevalence of bright rufous-brown in the upper portions of the plumage, whereas in Scotch and other European specimens black is the predominating colour; and again, in the American bird the black of the under parts is less extended. So far, however, as mere size goes, many examples obtained in autumn and winter in various parts of the Palæarctic region are equal in size to those of America; and even in the Palæarctic region there appear to be two races of Dunlin: a large and northern one of duller colours, and a smaller one of somewhat brighter tints, which is, as a rule, the race which breeds in our islands. There is, however, every gradation between the two extremes. It was to small individuals of the southern race that the name of *Tringa schinzi* was originally applied by Brehm, and was subsequently transferred in error to Bonaparte's Sandpiper, as already shown (*supra*, p. 372). These two races are analogous to those observable in the Ringed Plover (*supra*, p. 259). As regards the American form, the differences appear to be rather more defined, but in sketching the geographical distribution of the Dunlin, it seems convenient, with this proviso, to consider that all are merely local races of the same species.*

In autumn the immense flights which visit our eastern shores consist, as Mr. Cordeaux informs the Editor, of somewhat large individuals, which shift their quarters southward or westward, according to the severity of the weather, and which may be again observed on their return northward in March and April. In May arrivals of the smaller and more richly-coloured form are of tolerably regular occurrence; the latter being much tamer and less suspicious than the larger race, and more frequently found in pairs than in flocks.

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* The Editor has examined the very extensive series in the British Museum, and about forty specimens in the collection of Mr. Harting, besides many others. He finds that the above distinctions hold good in the main; but breeding birds from Repulse Bay, Melville Peninsula, are as dark on the back as many Old World specimens, whilst agreeing in size with the American form.

The Dunlin's favourite breeding quarters are wild moorlands—frequently at a considerable elevation; and localities of this nature are more frequent in the northern than in the southern portions of the British Islands; but where such exist a few pairs may be found breeding even in the extreme south. The late Mr. E. H. Rodd has recorded several nests on the moors between Kilmar and Dosmare Pool on Bodmin Moors, in Cornwall (Zool. ss. p. 1319); and some probably breed in the adjoining county of Devon. Although many localities in Wales would appear to be suitable, satisfactory evidence of its nidification there is as yet wanting. At Wirral, and other parts of the Dee marshes in Cheshire, however, a few breed. It is not known to breed in Dorsetshire, nor along the south coast, nor has its nest been taken in Essex, Suffolk, or Norfolk,* but in Lincolnshire Mr. Cordeaux informs the Editor that on the 8th June, 1883, a keeper told him that he had recently found a nest of the 'Jack Snipe' near Gainsborough, and an egg, which was subsequently sent, proved to be that of the Dunlin. It breeds in limited numbers on some of the moorlands of Yorkshire and Lancashire. In Northumberland it used to breed regularly at Prestwick Car, where Mr. John Hancock says that he has found four nests in a single day; and a few pairs still breed on the Cheviots and other moorlands. In Cumberland it nests in some numbers on Brough Marsh, between the Eden and the Esk.

Passing to Scotland, the distribution of the Dunlin during the breeding season becomes more general. The late Mr. Alston found its nest in the Upper Ward of Lanarkshire, at an elevation of 1,000 feet above the sea-level, and Mr. R. Gray states that he has taken the bird and eggs on several occasions on the Renfrewshire hills, within full view of the city of Glasgow. Macgillivray, in a communication to Audubon, says, "About the middle of April these birds betake themselves to the moors, in the northern part of Scotland, and in the larger Hebrides, where they may be found scattered in the haunts selected by the Golden Plovers, with which they are so frequently seen in company that they have obtained the name of 'Plover's pages.' In the Hebrides, from that season until the end of August, none are to be found along the shores. The nest is a slight hollow in a dry place, having a few bits of withered heath and grass irregularly placed in it. The eggs are four in number. If, during incubation, a person approaches their retreats, the male especially, but frequently the female also, flies up to meet the intruder, settles on a tuft near him, or runs along and uses the same artifices for decoying him from the nest or young as the Plover or Ring Dotterel. Towards the end of August, the different colonies betake themselves to the sandy shores. On a large sand-ford in Harris I have at this season seen many thousands at once, running about with extreme activity in search of food. This place seemed a general rendezvous, and after a few weeks the host broke up and dispersed, few, if any, remaining during the winter."

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* The late Rev. R. Lubbock's remark that eggs brought to him as those of the Jack Snipe always proved to be those of the Dunlin, might lead to an inference which would be erroneous. *Cf.* Stevenson, B. Norfolk, ii. p. 379.

Of this bird, near Tongue in Sutherlandshire, Selby says, "we found it abundant upon the margins of all the lochs. The nest is usually placed under the shelter of some tuft or bush, removed a short distance from the usual water-line of the loch." Mr. Harvie-Brown, however, considers it to be very local in that county, and in the western district of Assynt he only knows of one breeding-place. In the Orkneys and in the Shetlands it nests in considerable numbers. In Ireland the number of birds which remain to breed is somewhat limited, considering the apparent suitability of many localities: the neighbourhood of Lough Conn and Ballycroy, both in co. Mayo, may be cited; but in autumn and winter the species occurs in tens of thousands.

The Dunlin breeds in the Færoes, and also in Iceland, leaving that island in October. In Norway it is very widely distributed, breeding numerously above the Arctic circle:

less abundantly on the fells in the birch-region; and occasionally wintering in some numbers on the south coast. In Swedish Lapland and Russia it is very common in summer, its northward range extending to Novaya Zemlya. In Denmark it nests in places where the coast is flat, with short grass; also on the shores of the Baltic, Northern Germany, and, according to Professor Schlegel, sometimes on the Hoek van Holland, at the mouth of the Maas: these birds belonging to the smaller race. The approach of cold weather drives it to the south, and from the autumn onwards it is generally distributed over the rest of Europe: principally on the coasts, but not unfrequently on the inland waters. To the Iberian Peninsula it is a regular migrant, but some remain to breed, for Mr. Abel Chapman shot a bird in the *marisma* below Jerez de la Frontera, from a clutch of four eggs, one of which he gave to the Editor, and it is now in the collection of Mr. H. Seebohm. From autumn to spring this species is abundant on the shores and islands of the Mediterranean; and, according to Dr. Giglioli, it undoubtedly breeds in the marshes of Venetia in Northern Italy.

On migration the Dunlin visits the Canaries and the coasts of Morocco, Algeria, and Egypt; whence it goes southwards along the Nile to Nubia, Kordofan, Sennaar, and Abyssinia, and down the Red Sea and along Eastern Africa to Zanzibar and Mozambique. In Asia it occurs on passage, and in winter on the southern shores of the Caspian, on the coasts of Baluchistan, in Nepal, and on the northern shores of India; but it has not yet been obtained in Ceylon or Tenasserim, although examples from Borneo and Java are in the Leiden Museum. It migrates through Turkestan, and Dr. Severtzoff says that it crosses the lofty Pamir Range in September, probably on its way from Siberia, throughout the whole northern portion of which it breeds as far as Behring's Straits. From Kamtchatka its range can be traced through the Kuril Islands to Japan, where, according to Messrs. Blakiston and Pryer, individuals present the usual variability in plumage and length of bill; and it is recorded by Swinhoe as a winter visitor to the shores of China and Formosa.

The Dunlin is believed to breed in Greenland, and it certainly does so on Melville Peninsula, at Felix Harbour, and along the Arctic coast of America to the mouth of the Yukon. On the Pacific side it goes down to British Columbia, and as far as Stockton, California; and on the Atlantic coast it ranges from the Arctic regions to the Southern United States. Dr. Gundlach found it in Cuba, and it probably visits some other islands of the West Indies, south of which its range does not seem to be authenticated.

The nest of the Dunlin is composed of fibrous roots and pieces of grass, and is frequently so well concealed in a depression among the grass, moss, or short heather, that, unless the bird is flushed from it, the site is very difficult to find. The eggs, four in number, are pear-shaped, like those of other birds of this genus, of a greenish-white blotched and spotted with two shades of dark red-brown: they measure 1·35 by ·95 in. The young can run and conceal themselves immediately on quitting the shell. During the pairing-season the birds soar to a moderate height, uttering a somewhat monotonous and prolonged *dwee;* but the usual call at other times is a clear whistling *trui,* or *pe, pe, pe.* The food of the Dunlin consists of small crustaceans, marine insects, and worms.

Mr. R. Warren relates (Pr. Nat. Hist. Soc. Dublin iii. p. 117) an instance of finding one of these birds caught in a most remarkable trap. His attention was first drawn to it by seeing it repeatedly rise a short distance into the air, and on alighting violently shaking its head, apparently striving to detach a round lump from off the end of its bill. The bird appeared very much exhausted; and on approaching closer to ascertain the cause of its strange manœuvres, he discovered that a cockle, of the size of a hazel-nut, was firmly fixed to its bill, and the most violent efforts of the poor bird failed to get rid of it, at least while he was observing it. It is very probable that the Dunlin discovered the cockle lying open on the sands, and, when attempting to feed on it, was caught by the cockle suddenly closing.

The adult bird in its perfect summer plumage has the beak black; the irides brown; top of the head a mixture of black and ferruginous, the dark colour occupying the centre of each feather; neck all round greyish-white streaked with black; feathers of the back, scapulars, and tertials black, with rufous edges; wing-coverts almost as in winter; these feathers appearing to be but little affected by the seasonal assumption of colour, and generally remaining nearly the same throughout the year; primaries greyish-black with white shafts; secondaries the same but edged with white; rump and upper tail-coverts a mixture of black and ash-colour, partly tinged with ferruginous; two middle tail-feathers the longest, pointed, dark brown, with lighter-coloured edges; the others nearly uniform ash-grey; chin white, neck in front greyish-white streaked with black; breast mottled black and white; vent, thighs, and under tail-coverts white; legs, toes, and claws black.

In size there is considerable variation, but, as a rule, the females are the larger, and have the longer bills. They are naturally the heavier, weighing about 2 oz. against 1¾, the weight of the male.

The whole length averages eight inches; the beak varies from an inch to an inch and a half. From the carpal joint to the end of the first quill-feather, which is the longest in the wing, four inches and five-eighths.

Young birds of the year have the head and neck pale brown; the back, wing-coverts, and tertials a mixture of black, dark brown, pale brown, and buff; neck in front pale brown, breast white, both spotted with dusky-brown; beak and legs brownish-black: from this state they change gradually till they have assumed the plumage of their first winter.*

The adult bird in winter has the head, neck behind, back, wing-coverts, and tertials nearly uniform ash-grey, the centre of each feather a little darker and the margin a little lighter; chin white; neck in front greyish-white with dusky streaks, breast and under parts white; beak and legs nearly black.

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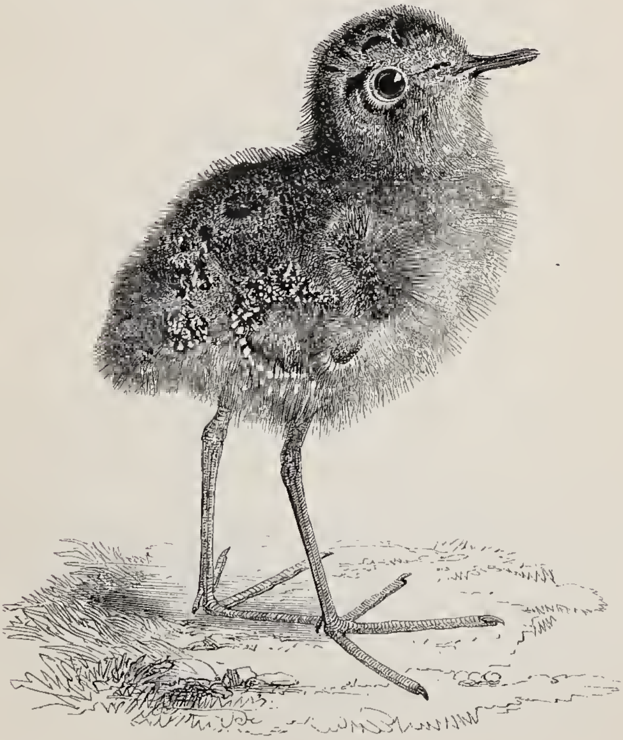
* See Mr. C. M. Adamson's 'More Scraps about Birds,' pp. 115-120, for some interesting remarks upon the moult of the Dunlin.

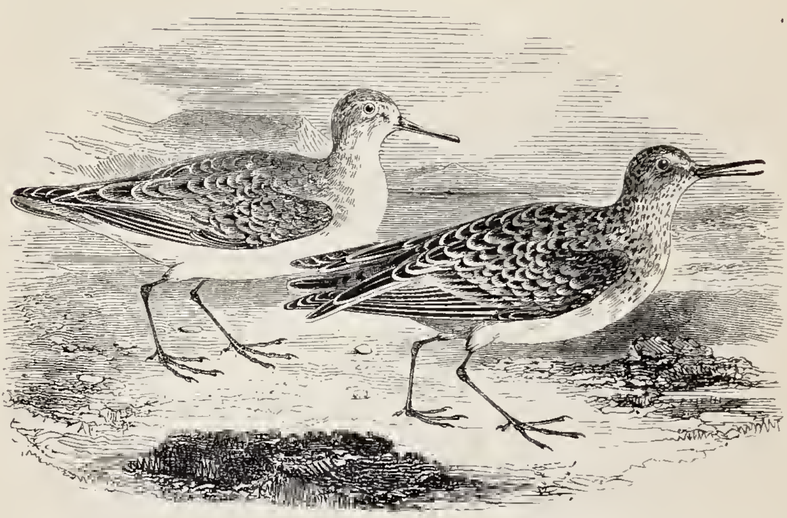
Varieties of the Dunlin are decidedly uncommon. Mr. F. Hele, of Aldeburgh, Suffolk, obtained a pure white example in much worn and abraded plumage on the 26th August (Field, Sept. 16th, 1865); and Mr. Stevenson (B. Norfolk, ii. p. 384) mentions one which was white, with the exception of a few rust-coloured feathers, shot on Breydon in the spring. An albino has also been obtained in the Hebrides.

In the nestling the under parts are greyish-white; the upper parts reddish-buff, with a dark loral streak; three streaks of black on the crown of the head, uniting on the nape; and similar dark markings on the back; legs and feet pale brown.

For the chick figured the Author was indebted to the late Mr. Heysham, of Carlisle.



LIMICOLÆ. *SCOLOPACIDÆ.*



Tringa minuta, Leisler.*

THE LITTLE STINT.

Tringa minuta.

The Little Stint, as it is usually called, from its diminutive size, was first mentioned by Pennant as a British bird from a specimen killed in Cambridgeshire. The British Islands evidently lie to the west of the line of migration of the main body, but in varying numbers this species is found on one portion or another of our coasts nearly every autumn, and, occasionally, in spring. Saxby says that Unst, the northernmost of the Shetlands, is visited pretty regularly at the former season, but in the rest of the group, and in the Orkneys, its occurrence is rare; and, according to Mr. R. Gray, it has only been observed in small numbers down the east coast of Scotland, but not on the west. In England, the eastern side of the island is by far the most favoured; the autumn arrivals taking place from early in August to the middle of October, after which the migrants continue their course to the south and west. They naturally linger a little on our southern coast, extending their visits to Cornwall, but to the coast of Wales and of the north-west, their visits are unfrequent, and are principally to Lancashire, and the Solway Firth in Cumberland. In Ireland, where the Little Stint remains somewhat later than in Great Britain, its autumnal occurrences in limited numbers have been mainly in Antrim, Down, and on the eastern side of the island. On the spring migration examples have been obtained in the south and east coasts of Great Britain, in May, and even as late as the 19th June, as recorded by Mr. Stevenson. It appears probable that a few non-breeding birds remain on our shores during the summer, for he mentions an example killed at Yarmouth on the 16th July, and two others shot a week or two previously, and it is not possible that individuals of a species which breeds so late and so far north, should by that time have returned from their domestic duties.

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* Nachträge zu Bechstein's Naturg. Deutschl. p. 74 (1812).

The Little Stint occurs on its autumnal migration in suitable localities throughout the greater part of Europe, and, with the exception of the western coast of France, it appears to be almost as abundant on the vernal passage. At the latter season individuals are often obtained in the south of Europe in such advanced breeding plumage, and up to so late a date as to give rise to suspicions that it might breed in such localities as the marshes of the Black Sea, but there is no direct evidence of its having done so. It does not appear to winter—at least not in any numbers—on the northern shores of the Mediterranean; but a considerable portion remain in Morocco, Algeria, and Egypt, whilst others continue their southward course up the valley of the Nile, and along both sides of the African Continent down to the Transvaal, Natal, and Cape Colony. It visits the Seychelles, Arabia, the coasts and inland waters of India, the Andaman Islands, and Ceylon, but beyond these limits its range becomes difficult to define, being complicated with that of *T. albescens*, Temm., a species which is almost undistinguishable in winter dress, except perhaps by its constantly stouter tarsus, but which in summer has a much more rufous breast, and which is identified by some ornithologists with *T. ruficollis*, Pallas. Both the species and their synonymy are involved in great confusion, and the identifications of some high authorities have been repudiated by others. It will suffice to say that our *T. minuta* visits on migration the greater part of Southern Asia, passing over the lofty mountain ranges by the Pamir, and also by Gilgit, and occurring in Siberia in summer at least as far east as Lake Baikal, from which locality undoubted specimens are available for examination. On the Amoor, and on the Stanowoi Mountains, and thence to the Sea of Okhotsk, it appears to be represented by the Long-toed Stint, *T. subminuta*, Middendorff, a species which also visits India, Ceylon, China, and Japan. Only a monograph by some competent authority can clear up the matter, and in treating of the Little Stint as a British Bird it is unnecessary to contribute in any way to the existing tangle.

The breeding-grounds of the Little Stint were correctly, albeit vaguely, supposed to be situated in the northern districts of Europe and Asia; but no authentic information seems to have been obtained before the celebrated journey of Middendorff to Siberia. That intrepid traveller found the Little Stint on the Taimyr river in 74° N. lat., where he obtained a clutch of four eggs with the parent bird on the 1st July, and young in down on the 10th of that month (Sibirische Reise, ii. p. 221). It was only much farther to the eastward that he obtained the Long-toed Stint, which he distinguished by the name of *T. subminuta*. For years the dreary Taimyr Peninsula was the only known breeding-haunt of this species, but in 1872, Messrs. Alston and Harvie-Brown obtained a bird in full nuptial plumage on the 21st June, at the mouth of the Dwina, showing that the summer range of the Little Stint extended farther to the westward than was previously anticipated. In the same year Mr. Collett found the species common on the island of Tamsö, in the Porsanger-fiord, in July; and in 1875, Messrs. Seebohm and Harvie-Brown started for the

Petchora, determined to do all in their power to obtain authentic information as to its nidification. It was not until the 22nd July that they were successful, the locality being on the *tundras* at Dvoinick, near the mouth of that great river. The description and coloured illustrations of four of the eggs were published in 'The Ibis,' 1876, pp. 294–308; but the following abridged narrative is taken from Mr. Seebohm's 'Siberia in Europe,' pp. 267–275:—

"I had not gone far before I heard our interpreter Piottuch shouting in a state of great excitement. Harvie-Brown was the first to come up; and I joined them shortly afterwards. I found them sitting on the ground with a couple of Little Stints in down. I sat down beside them, and we watched the parent bird as she was fluttering and flying and running all round us, sometimes coming within a foot of one of us. After securing the old bird we went on a short distance, and Piottuch again made loud demonstrations of delight. This time it was nest and eggs. The nest was like that of most Sandpipers, a mere depression in the ground, with such dead *maroshka* (cloudberry) leaves and other dry material as was within easy reach, scraped together to serve as lining. The position was on a comparatively dry extent of tundra, sloping from the top of the little turf cliffs that rise from the lagoon down to the sand-hills at the twin capes, between which the tide runs in and out of a little inland sea. For perhaps a verst from each twin cape, between the sand and the mouth of the little inland sea, is an extent of dead flat land, covered over with thick short grass, and full of little lakes, mostly very shallow and filled with black or coffee-coloured mud with an inch or two of brackish water upon it. Some of these pools are covered with aquatic plants; and others are open water. These lakes and pools seem to be the real point of attraction; and on their edges the Little Stints feed, in small flocks of from half a dozen birds to a score, as they happen to meet from the tundra. The large flock of perhaps a hundred or more birds, which was occasionally seen, might possibly have been last year's birds and not breeding; but more probably it consisted entirely of males, which, so far as we had an opportunity of observing, do not take any part in incubation. The ground where the nests were placed was full of tussocks or hummocks, close together, the swampy ground between being almost hidden, or traceable only by rows of cotton-grass. The tussocks are covered with green moss, with now and then a little reindeer-moss; but this undergrowth is almost hidden with cloudberry, a few species of *Juncus*, and sundry *Carices*, with occasionally a few dwarf shrubs and flowers of the tundra. The nests were within a hundred yards of the place where I shot the five Little Stints on the 14th July, on a comparatively dry extent of tundra, gently sloping towards the north-east, lying between the lagoon and the inland sea—exactly the place that one would expect them to breed in, not too swampy, but probably the coolest place the birds could have chosen. The Pytkoff Mountains, though at a considerably greater elevation (513 feet above the level of the sea), are, no doubt, warmer, because more inland. The sandy shore, having little or no cover, would also be hotter from the sun. Facing the north-east, this part of the tundra catches the most of the prevailing winds at this season of the year, and the least sun; and no doubt the large bay or inland sea on one side, and the open water on the other, help to cool the air.

"Our next nest was taken on the 24th of July. Harvie-Brown and I had been up all night, shooting by the light of the midnight sun, hoping to avoid the mosquitoes, and were returning home to our wrecked ship in a thick white morning mist. I was glad to see Piottuch emerge, with the intelligence that he had found another nest of the Little Stint, containing four eggs, about three versts off, and had shot the bird, leaving the nest and eggs for us to take. We walked on together a short distance, when I heard the now familiar cry of a Little Stint behind me, a sharp *wick*, almost exactly the same as the cry of the Red-necked Phalarope or that of the Sanderling. Turning quickly round I saw the bird flying past as if coming up from its feeding-grounds.

It wheeled round us at some distance and alighted on the ground about eighty yards ahead. We walked slowly up towards it, and stood for some time watching it busily employed in preening its feathers. By-and-by we sat down. It presently began to run towards us, stopping now and then to preen a feather or two. Then it turned back a few paces, and lifting its wings settled down, evidently on its nest. We gave it three minutes' grace, to be quite sure, and then quietly walked up to the place, and sat down, one on each side of the eggs. The bird as quietly slipped off the nest, and began to walk about all round us, now and then pecking on the ground as if feeding, seldom going more than six feet from us, and often approaching within eighteen inches. It was a most interesting and beautiful sight. The tameness of the bird was almost ludicrous. We chatted and talked; but the bird remained perfectly silent, and did not betray the slightest symptom of fear or concern, *until I touched the eggs*. She then gave a flutter towards me, apparently to attract my attention. I turned towards her, and she resumed her former unconcern. I stretched my hand towards her. She quietly retreated, keeping about two feet from my hand. She seemed so extremely tame that I almost thought for the moment that I could catch her, and getting on to all-fours I crept quietly towards her. As soon as I began to move from the nest, her manner entirely changed. She kept about the same distance ahead of me; but instead of retreating with the utmost apparent nonchalance, she did everything in her power to attract me still further. She shuffled along the ground as if lame. She dropped her wings as if unable to fly, and occasionally rested on her breast, quivering her drooping wings and spread tail, as if dying. I threw one of my gauntlets at her, thinking to secure her without damage, but she was too quick for me. Piottuch then fired at her and missed. He followed her for some distance; but she kept just out of range, and finally flew away. We waited about a quarter of an hour at the nest, talking and making no effort to conceal ourselves, when she flew straight up and alighted within easy shot, and I secured her. The Little Stint seems to be a very quiet bird at the nest, quite different from Temminck's Stint. When you invade a colony of the latter birds, especially if they have young, the parents almost chase you from the spot—flying wildly round and round, and crying vociferously, often perching upon a stake or a tree, or hovering in the air and trilling. We observed none of these habits in the Little Stint. So far as we saw, only the female takes part in incubation, and only the female is seen near the nest. On our way back to the wreck we met with a party of Sanderlings on the shore, and shot two of them. No doubt these birds were breeding somewhere in the district. After a good dinner of Willow-Grouse and a siesta of three hours, we started to take the nest that Piottuch had marked. Whilst we had slept, the weather had changed. The mosquitoes had all gone. A smart gale was blowing from the north, and a heavy sea was breaking on the shore. It was cloudy, and dark, and cold, with an attempt now and then at rain. The nest was a couple of miles off, very near the shore of the inland sea, but on somewhat similar ground—moss, cloudberry, grass, &c. The eggs were intermediate in colour between those of the other two nests. On our return to our quarters we found that our Samoyede servant had caught a young Little Stint, half-grown, a very interesting bird. Like the young of the Dunlin, the first feathers are those of summer plumage. On comparing the young in down and half-grown birds of the Dunlin with those of the Little Stint, we noted that the legs of young Dunlin in down were pale brown, whilst those of the half-grown and mature birds were nearly black; the Little Stint, on the other hand, seems to have nearly black legs and feet at all ages.

"The Little Stint is evidently much more nearly allied to the Dunlin than to Temminck's Stint, and ought to be called the Little Dunlin. The birds are very similar in colour. The eggs of the Little Stint can hardly be mistaken for those of Temminck's Stint, but are in every respect miniature Dunlin's eggs. The young in down of

Temminck's Stint are quite grey compared with the reddish-brown of the young of the Dunlin. The young in down of the Little Stint are still redder, especially on the sides and the back of the neck. On the 27th July Harvie-Brown walked over to the other side of the little inland sea, and found two more nests of the Little Stint, each containing four eggs. These nests were on different ground. They were not on the tundra properly so called, but on the feeding-ground, flat land covered with sand, upon which short grass and bunches of a thick-leaved yellow-flowered plant were growing, abounding also with little lakes and pools. The real tundra is about 150 yards from the water's edge in this place; and the feeding-ground lies between, scattered over with drift wood of all sorts. The behaviour of the birds at these two nests was exactly the same as at the previous ones.

"The average size of the twenty eggs we obtained of the Little Stint is about $1\frac{1}{16} \times \frac{3}{4}$ inch, a trifle smaller than the eggs of Temminck's Stint usually are. The ground-colour varies from pale greenish-grey to pale brown. The spots and blotches are rich brown, generally large, and sometimes confluent at the large end. They probably go through every variety to which Dunlins' eggs are subject. All the Little Stints' eggs which we found, with one exception, which would probably be a barren one, were very much incubated."

Since this discovery, the eggs of the Little Stint have been taken by Henke near Archangel (Ibis, 1882, p. 381), and by Mr. E. Rae, in the Kola Peninsula; and Mr. R. Collett has given an account of its breeding in Northern Norway (J. f. Orn. 1881, pp. 323–332). Dr. Finsch obtained a nest with four eggs on the Podorata river, which flows into the Kara Gulf; and some eggs taken by a Samoyede were brought to Mr. Seebohm on his trip to the Yenesei, thus connecting the breeding-range from the west with the first discovery by Middendorff on the Taimyr.

Little Stints are most frequently found on the sandy shores of the sea, and generally in company with the Dunlin or the Sanderling, or both, as they fly in small, and sometimes in large flocks together. They select for food aquatic insects, small crustacea, worms, and mollusca; and in the stomachs of some shot on their autumn migration towards the end of August, near Christiania, Mr. Collett found the seeds of an aquatic plant. The note, which is constantly uttered, is a whispering, warbling trill, very different from the louder call of the Dunlin, but stronger and deeper than that of Temminck's Stint; and the call of a flock is something like the confused chirping of grasshoppers or crickets.

In its summer plumage the beak is black; the irides dark brown; the top of the head and the neck ferruginous, with specks of black; the feathers of the back, scapulars, wing-coverts, tertials, and upper tail-coverts, black in the centre, with broad ferruginous margins; broad white tips, forming a conspicuous bar along the lower wing-coverts; the primaries nearly black at the tips, greyish-black above, with white shafts; the secondaries greyish-black tipped with white; the tail, when perfect, doubly forked, the lateral feathers ash-brown, the two central ones black with rufous margins; the chin, breast, and all the under surface of the body pure white; sides of the neck, down to the front of the wing, and a band round the front of the neck, ferruginous speckled with black; axillary plume pure white; legs, toes, and claws dull black.

The whole length is six inches; the beak three-quarters of an inch; from the carpal joint of the wing to the end of the first quill-feather, which is the longest, three inches and three-quarters; the length of the tarsus ten lines and a half. The female is somewhat larger than the male.

An adult bird in its autumn plumage, killed in September, has the beak black; irides dark brown; from the base of the beak to the eye, and on the ear-coverts, a brown streak; above and below the eye greyish-white; sides and back of the neck ash-grey, streaked with darker grey; feathers of the back, scapulars, wing-coverts, and tertials nearly black, with broad margins of reddish-brown and buffy-white; quill-feathers dusky, with white shafts; secondaries edged and tipped with white; rump and upper tail-coverts dark brown, edged with dull reddish-brown; tail-feathers ash-grey, margined with buffy-white; chin, breast, and all the under surface pure white, with the exception of a dusky band across the bottom of the neck in front; axillary plume white at all seasons; legs, toes, and claws nearly black.

Young birds of the year, in their first autumn, have the feathers of the upper surface of the body ash-brown rather than black, in the middle, with broad margins of buffy-white, which soon become almost pure white.

The adult bird in winter plumage is seldom seen in this country, but in examples from North Africa and from Cape Colony have the head and neck ash-grey, the central line of each feather being a little darker than the margin; back, wing-coverts, rump, and upper tail-coverts ash-colour, the shaft of each feather forming a decided dark line; primary and secondary quill-feathers as in autumn; tertials ash-brown, with lighter-coloured margins; tail-feathers ash-grey, with narrow white edges; all the under surface of the body as in autumn; beak, irides, legs, toes, and claws, also as in the autumn.

The nestling has already been described, and a coloured figure of it is given on the same plate with the young of the Dunlin and Temminck's Stint, in Mr. Dresser's great work, 'The Birds of Europe,' vol. viii. pl. 550.

TRINGA MINUTILLA, Vieillot.*

THE AMERICAN STINT.

THE AMERICAN STINT has been obtained in this country on two occasions. The first example was shot by Mr. Vingoe, in Mount's Bay, Cornwall, on the 10th October, 1853. It was found alone on a piece of wet grass land adjoining the sea-shore, and rose silently. Mr. Vingoe called the attention of Mr. Rodd to it, and he recorded it (Zool. p. 4297); and the occurrence was also noticed under the name of *Tringa pusilla* in the Preface, p. vi., to the 3rd Edition of this work. In September, 1869, a second example was shot on Northam Burrows, near Bideford, by Mr. Rickards, of Clifton (Zool. s. s. p. 2025), who brought the freshly-skinned specimen to Mr. Harting for his inspection, and its identity was vouched for by that competent authority (Hbk. Brit. Birds, p. 143). The species has therefore as good a claim to be noticed in this work as many other stragglers; but as an engraving would not adequately show the points of difference between it and the Little Stint, it has not been considered necessary to figure it. The American Stint is smaller in size than our bird, with proportionately longer bill; it is conspicuously darker at all seasons; in the breeding plumage the fore part of the chest is ashy-buff, with distinct spots of dark brown—not rufous with tiny dots as in *T. minuta*—and the legs are light yellowish-brown, whereas in *T. minuta* they are black.

The breeding-range of the American Stint extends right across North America, within the limits of the Hudsonian fauna. Audubon found it plentiful in Labrador, among the mossy rocks near the sea-shore; and he describes the nest as a hollow lined with a few blades of slender dry grass, the locality chosen being under the lee of a small rock, exposed to all the heat the sun can afford in that country. The eggs are of a rich cream-yellow tint, blotched and dotted with very dark umber, especially at the larger end: specimens in Mr. Dresser's collection measure 1 by ·8 in.

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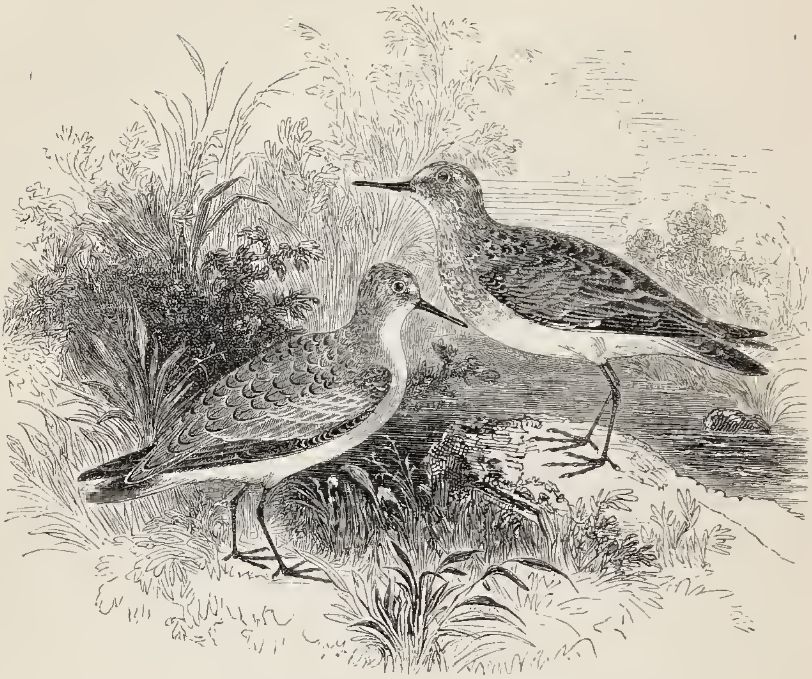
* Nouv. Dict. d'Hist. Nat. xxxiv. p. 452 (1819).

On its migrations this Stint is found throughout the United States, numbers wintering in the south, whilst others continue their course to the Bermudas, the West Indies, Mexico, Central America, Colombia, and Brazil. The habits of this species appear to be similar to those of its congeners.

The adult in breeding plumage is blackish above, a few of the feathers on the head and back slightly edged with rufous; hinder part of the neck ashy varied with rufous; wing-coverts ash-grey externally margined with buff, the greater coverts edged with white, forming an indistinct alar bar; quills ash-brown, blacker towards their tips, the shafts whitish-brown, with the exception of the outermost, which is white, inclining to brownish only towards the tip; lower part of the back and rump deep black; tail pale ashy-grey, the two middle tail-feathers elongated, blackish like the rump; lores, eyebrows, and sides of the face whitish; throat white; chest ashy, mottled with marks of dark brown in the centre of some of the feathers; rest of the under surface of the body white; under wing-coverts whitish, some of the lower ones mottled with brown; bill blackish-brown; feet light yellowish-brown; iris dark brown. Externally there is no material difference between the sexes. Total length about five inches, wing from carpal joint to tip three and two-fifths of an inch; tail one inch and a half.

In autumn plumage some of the dorsal feathers and the scapulars are edged with whitish. The winter plumage is ashy-grey above, some of the dorsal feathers dark purplish-brown in the centre and margined with whitish; lower part of back and rump blackish; wing-coverts like the back, the greater coverts clearer brown, and indistinctly tipped with white; rest of the plumage as in summer.

LIMICOLÆ. *SCOLOPACIDÆ.*



TRINGA TEMMINCKI, Leisler.*

TEMMINCK'S STINT.

Tringa Temminckii.

THIS diminutive Stint, named after M. Temminck, is smaller than the Little Stint previously described, and is the least of the British Sandpipers; it is also rarer than the Little Stint, and somewhat different in its habits, frequenting the borders of rivers and fresh-water lakes, although it is sometimes found on the muddy creeks and sandy shores of the sea.

Although less rare on migration than was formerly supposed, this species is far more irregular in its visits, and less numerous than the Little Stint, notwithstanding that its breeding-range commences at no great distance from our northern shores. It is, however, precisely in our northern provinces that its occurrences are the rarest. Mr. R. Gray says (B. West Scot. p. 321) that he is only able to trace one specimen, shot in Caithness many years ago; and in Ireland it has only once been recorded by Thompson (B. Ireland, ii. p. 302). In England, commencing with Northumberland, we learn from Mr. Hancock that seven specimens were obtained in the month of September between 1832 and 1844; and along the coast of Yorkshire and Lincolnshire it is a casual visitor of rare occurrence in autumn. In Norfolk, owing perhaps to the numerous keen observers in that county, Temminck's Stint has been more frequently recorded, and, in addition to many in autumn, Mr. Stevenson cites about ten examples which were obtained on the return passage in May. This Stint does not stay the winter, but one was obtained as late as the 23rd November. In Suffolk, Mr. Hele has obtained it in both spring and autumn; and the Rev. Leonard Jenyns sent the Author notice of one killed in Cambridgeshire, on Foulmire Moor, by the late Mr. Baker of Melbourne. Mr. Bond informed the Author that he met with a pair of old birds in the spring of 1839, on the margin of Kingsbury Reservoir in Middlesex, and several young ones in the autumn of the same year, obtaining one of the old ones and five young ones. Mr. Harting (B. Middlesex, p. 200) records two more, and on the 4th October, 1871, Mr. J. H. Gurney, jun., watched a couple in the same locality. Its visits can be traced along the coasts of England, by Essex, Kent, Sussex, Hants, Dorset, Somerset, and Devon, to Cornwall and the Scilly Islands. Inland it has been obtained at Mansfield Reservoir, in Nottinghamshire, Ribbleton Moor, in Lancashire, and some other localities. On the western side of the island its visits are very rare; Heysham, however, recorded it as occurring in Rockcliffe salt-marsh, by the Solway.

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* *Tringa Temminckii*, Leisler, Nachträge zu Bechst. Naturg. Deutschl. p. 63 (1812).

The breeding-grounds of Temminck's Stint commence in the northern districts of Norway, and extend over a great part of Sweden, and across Northern Russia; also through Asiatic Siberia to the north of the forest-growth, and as far east as Pitlekaj, on the shores of Behring's Straits, where it was obtained in June by the 'Vega' expedition. On migration it visits the shores and inland waters of the Continent of Europe down to the Mediterranean, beyond which it has been traced as far south as Senegambia in winter. It occurs at that season in Algeria, Egypt, Nubia, Kordofan, and on the coast of the Red Sea down to 10° N. lat., returning northwards in April and May, though some few remain throughout the summer. On the Caspian and through the Caucasus it is a regular migrant in spring and autumn, and Severtzoff states that it breeds in Turkestan, among the mountains at an elevation of from 10,000 to 14,000 feet. It crosses the Pamir, and, according to the same authority, it breeds on the table-lands of that lofty range, and of the Altai; it passes through Gilgit and arrives in India from August onwards, stretching down the coast as far as Ceylon and Tenasserim, and it has occurred in Borneo. In Siberia, besides the far north, it breeds on the Stanowoi Mountains, and is believed by Prjewalsky to do so in Mongolia, but it does not appear to be so common as the Little Stint. It has been obtained in the Japanese island of Yezo, and to the coasts of China it is a winter visitor.

The eggs of Temminck's Stint, and its habits at the breeding-ground, were made known in the third edition of Hewitson's work, 'Eggs British Birds,' ii. p. 362, by an interesting communication from the late Mr. Wolley, who, writing of this species, says: "I have found it breeding in several localities north of the Bothnian Gulf, but it is scarce, and, as far as I have seen, confined to a very few spots. Grassy banks and pastures by the waterside are the kinds of places where it takes up its breeding-quarters, and it seems to delight in being near houses. Nothing can be more interesting or pretty than this little bird in the early part of summer; it is so tame that one could often catch it in a net at the end of a stick. At one time it is hovering with its wings raised over its back, or floating about, and it reminds one rather of some insect than any other bird; at another time, it may be standing on the top of a stone or stake, or the gable end of a cottage, and whether hovering or standing on its perch, it utters a constant trilling note, of which I can best give an idea by saying that it brought to my recollection the grasshopper warbler, though the resemblance is perhaps slight.

"When its eggs are very near, it sometimes runs about one's feet, and though it cannot but be anxious, it seems as busy as ever, picking gnats and other insects off the grass. One nest which I found was a short stone's-throw from a cottage where children were playing about in all directions; another was only a pace or two from a spring from which women drew water every day, and passers-by often stopped to drink. The nest is very simple; a few short bits of hay in a little saucer-shaped hollow, placed amongst thin grass or sedge, generally not far from the water's edge, but sometimes in the middle of a meadow. The eggs in 1854 were laid about Midsummer day."

The eggs are four in number, pyriform, of a pale stone-colour, sometimes with a greenish tint, blotched with brownish-red and dark brown; their average measurements are 1·1 by ·8 in. Mr. Collett says that he never found the females near the nest or young, and the brooding birds shot were all males with large incubation spots. Although the nests are in somewhat dry places, the young betake themselves to wetter localities as soon as they are out of the egg. From the stomachs of those he shot, Mr. Collett took insects common on the sea-shore, larvæ of *Staphylinidæ*, and fragments of quartz. The note is a sharp *tirr*.

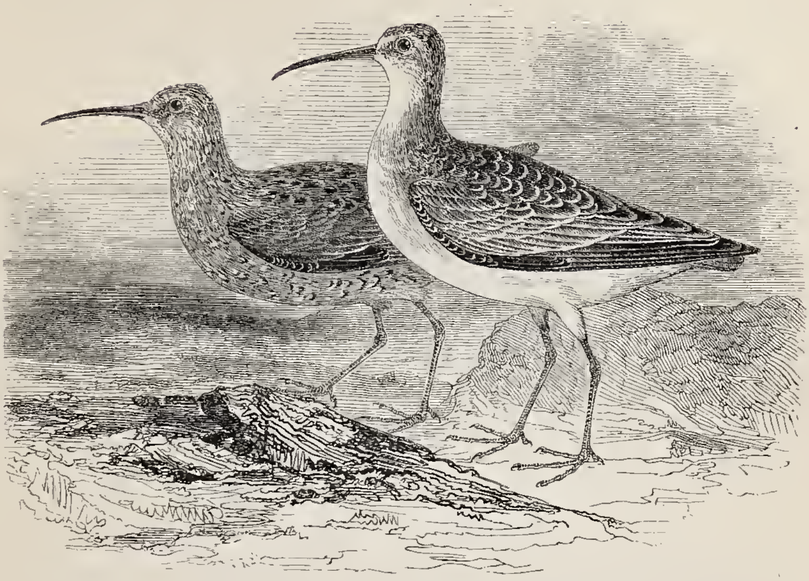
An adult bird, killed at a pond-side in Essex, in the month of May, and lent to the Author by the late Mr. Henry Doubleday, had the beak dull black; the irides dark brown; feathers of the head and neck pale brown, speckled with dark brown; feathers of the scapulars and back, some ash-brown, others black with rufous margins; wing-coverts nearly uniform ash-brown; primaries dusky-brown, the shaft of the first quill-feather whiter than those of the others; secondaries dusky, but tipped with white; tertials uniform dusky-brown; tail-coverts dusky-brown, those nearest the tail-feathers almost black; tail cuneiform, the central pair of feathers the longest, the darkest in colour, and pointed; the next feather on each outside ash-brown, the next ash-grey, the three outside feathers on each side white, tinged with light ash-grey on the narrow outer webs only, the outside feather on each side being the shortest; the chin white; sides of the neck grey; the neck in front pale brown, spotted with dusky-brown, and tinged with buff; breast, belly, and under tail-coverts white; under surface of the wings ash-grey, the shafts of all the primaries white; axillary plume pure white; legs and toes greenish-brown. A specimen killed earlier in the season had not acquired the rufous margins to the dark-coloured feathers of the back and scapulars.

An adult bird, killed in October, had the head and neck ash-grey, varied with dark brown; the back and wing-coverts nearly uniform dusky-brown, with narrow lighter-coloured margins.

The whole length is five inches and three-quarters; length of the beak nine-sixteenths of an inch; from the carpal joint to the end of the first quill-feather, which is the longest in the wing, nearly four inches; length of the tarsus eleven-sixteenths.

A young bird of the year, killed in the plumage of its first autumn, has the beak black; irides dark brown; head, neck, and upper part of the back, ash-grey; wing-coverts, scapulars, and lower part of the back ash-brown, each feather ending with a half circle of black, and a minute terminal line of white; primaries dusky-black; secondaries the same, but tipped with white; tertials ash-brown, with dark shafts, and tipped with white; central tail-feathers elongated, pointed, ash-brown, outside feathers white; chin, neck in front, breast, and all the under surface, pure white.

The representations of Temminck's Stint here given were taken from an adult bird in spring, and a young bird in autumn. A ready means of distinguishing this species from the Little Stint, as pointed out by Mr. Harting (B. Middlesex, p. 199), is by the *white shaft* to the first quill-feather only, the *white* outer tail-feathers, and the light-coloured legs. Temminck's Stint is a miniature Common Sandpiper, whereas the Little Stint is a miniature Dunlin.



TRINGA SUBARQUATA (Güldenstädt*).

THE CURLEW SANDPIPER.

Tringa subarquata.

ONE of the earliest notices of the Curlew Sandpiper, or Pigmy Curlew, as a British bird, occurs in Boy's 'History of Sandwich,' in reference to a specimen shot in that neighbourhood, and Pennant mentions a second example killed in August, at Greenwich. This species was formerly considered to be a rare visitor to this country, but it probably remained in some instances undistinguished, when in its winter plumage, from the Dunlin at the same season; the beak, however, is longer, rather more slender, as well as more curved; the legs longer and thinner, and the bare part above the joint of greater extent: there is also a constant and marked difference on the rump and in the upper tail-coverts, which in this bird are invariably white, whereas in the Dunlin the feathers along the central line of the rump and upper tail-coverts are of the same colour as those of the back. In the summer plumage, and in the various vernal and autumnal changes in both, the differences are very obvious, the present bird changing to red underneath, and the Dunlin to black.

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* *Scolopax subarquata*, A. J. Güldenstädt, Nov. Comm. Petrop. xix. p. 471, pl. xviii. (1775).

Owing to the perfect breeding-plumage in which the Curlew Sandpiper is sometimes obtained, it has been erroneously supposed to have nested in the British Islands. It is, however, absent for only a short time. The Author obtained this bird in June, in the height of its summer plumage, from Norfolk, and had seen the young from the same locality early in July. The late Mr. Heysham, of Carlisle, also recorded the occurrence of a very beautiful male in nearly complete summer plumage, which was met with on Rockcliffe salt-marsh on the 27th of May, 1833. Some passed over Heligoland by the 4th July, 1880, and Mr. Cordeaux obtained two in summer plumage on the Spurn, on the 21st of that month. The principal arrivals, however, take place in August and September, the majority of the visitors being birds of the year, with buff-coloured breasts. Their numbers are extremely variable: in some years, as in 1873 and 1881, the species is very abundant, at other times less so; but it may be considered as a regular visitor to those portions of the coasts of Great Britain, from Shetland to Cornwall, which are suitable to its habits. Such localities are especially presented by the estuaries of the east coast of Scotland, the shores of Northumberland, the mouth of the Humber, the tidal waters of East Anglia, and the creeks of the flat portions of Kent, Sussex, Hants, and Dorset. It is, however, by no means confined to these, but may be noticed along the entire coast, and it is occasionally found inland, even in the central county of Nottingham, where large rivers and broad expanses of water tempt it to alight. It rarely, however, prolongs its stay beyond the latter part of October, but continues its course southwards. In Ireland, to which it is also a regular autumnal visitor, it has been known to remain in the southern counties until November, and even December.

The spring migrants northwards have been known to arrive on our shores by the 19th of March, and they continue to pass until June, but their numbers are far less than in autumn. As already mentioned (*antea*, p. 353), this species has been stated to have bred in Scotland, but there is no evidence that the species was correctly identified. The breeding-haunts of the Curlew Sandpiper are not as yet definitely known, and its eggs are still undiscovered.

The occurrence of the Curlew Sandpiper as a stragger to Iceland rests on the authority of Von Heuglin, and Major Feilden does not include it in his list of birds of the Færoes. In Norway, Sweden, and even in Finland, it is principally known on the autumnal migration, and is very rare in spring. At Dvoinick, at the mouth of the Petchora, Mr. Seebohm shot a female on the 15th July, out of a flock of six or seven, but it showed no signs of having been breeding. On his subsequent visit to the Yenesei, much farther east, he shot a bird in breeding-plumage on the 15th June, close to the Arctic circle, but he failed to acquire any knowledge of the precise locality of its nesting-ground. In a letter written on the Ob, Dr. O. Finsch stated (Ibis, 1877, p. 61) that he had found the downy young on the Yalmal Peninsula, but he subsequently corrected this, and the supposed Curlew Sandpipers proved to be Dunlins. Middendorff was the nearest, for he observed it on the Taimyr river, in lat 74° N., early in June, dispersed over the *tundras* for breeding purposes, and he obtained a female with a partially-shelled egg in the oviduct. Its summer range doubtless extends all along that Arctic coast, for the 'Vega' expedition obtained it at Jinretlen, close to Behring's Straits, on the 6th June, 1879.

Returning to Europe, we find the Curlew Sandpiper as a migrant on all the coasts of the Continent, where the localities are of a suitable nature. On the west coasts of France and of the Iberian Peninsula, it is principally an autumnal visitant, but from the mouth of the Guadalquivir to the extreme north-east of Spain it is very abundant in spring, frequently in the fullest breeding-plumage. Some cross Europe by the line of the Rhine and Rhone valleys, and others appear to do so through Transylvania; the valley of the Volga being another route. It occurs on migration along the entire shores of the Mediterranean, and some remain there during the winter, but the majority continue their course southwards, and, visiting Madeira, descend the African Continent along the line of the west coast; and by Egypt, Nubia, and the Red Sea to the Comoro Islands and Madagascar, to Natal, and to Cape Colony, where it is very abundant. Eastwards its winter range extends along the coasts of India to Ceylon, where Colonel Legge also found many birds of the previous year remaining throughout June and July; and thence down Burmah, Tenasserim, and the Malay Archipelago, to New Guinea, Australia, and Tasmania. It occurs on the elevated salt-lakes of Northern India, and evidently crosses the great mountain barrier on its migrations, for it was observed at Yarkand, and Dr. Severtzoff thinks it probable that this species breeds in the Pamir (Ibis, 1883, p. 75). In Southern Siberia it certainly occurs on passage, and also in Mongolia, though rare on the Amoor; and it is abundant on migration along the coast of China.

In Spitsbergen and Greenland the Curlew Sandpiper has not yet been found, and a hasty statement by a now deceased American ornithologist, as to the supposed discovery of its eggs in the latter country, is undoubtedly an error (Ibis, 1879, p. 486). To the American Continent the species is a rare straggler, chiefly to the Eastern United States. On the Pacific coast its occurrence has not yet been recorded, notwithstanding the approximation of its range on the Asiatic side of Behring's Straits, as already mentioned.

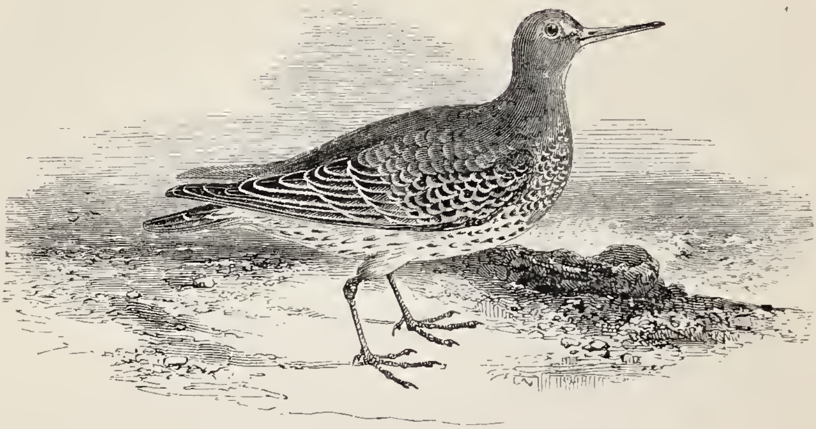
This species is generally found in small parties, which keep somewhat apart from the other waders feeding in their vicinity. They feed on insects, small crustacea, and worms, which they obtain by probing in the soft sand at the edge of the water.

The Curlew Sandpiper in its summer plumage has the beak nearly black; the irides brown; the head and neck all round reddish-chestnut, slightly varied with small streaks of black and white; the back, scapulars, small wing-coverts, and tertials, reddish-chestnut barred with black ; the greater wing-coverts ash-brown, edged with greyish-white ; primary and secondary quill-feathers blackish, with white shafts ; rump and upper tail-coverts white, with a few dark spots ; tail-feathers ash-colour, with white shafts ; breast and belly reddish-chestnut, indistinctly barred with black ; axillary plume white ; vent, flanks, and under tail-coverts, reddish-white, barred and spotted with black ; under surface of tail-feathers greyish-white ; legs and toes greenish-black. The whole length is about eight inches and a quarter ; the wing from the carpal joint to the end of the first feather, which is the longest, five inches. The females are rather larger than the males, but the colours are less brilliant.

In autumn the under surface of the body of an adult bird is a mixture of white and pale red in patches, and the dark feathers on the back and wing-coverts are mixed with some new feathers which are ash-grey ; the quill-feathers dusky.

Young birds of the year in their first autumn have the neck ash-grey ; the feathers of the back, scapulars, wing-coverts, and tertials, dark brown, margined with reddish-buff colour, which, later in the season, as winter approaches, change slowly to ash-colour, with buffy-white, and ultimately with pure white edges ; under surface of the body white, tinged with buff, becoming afterwards pure white.

Adult birds in winter plumage have the lores and ear-coverts ash-brown, bounded above with a streak of white ; the cheeks white ; top of the head and back of the neck ash-brown, streaked and spotted with darker brown ; back, scapulars, wing-coverts, and tertials, ash-brown, margined with white ; rump and upper tail-coverts white ; tail-feathers ash-grey, edged with white ; chin, breast, and all the under surface of the body, pure white ; legs and toes greenish-brown.



TRINGA STRIATA, Linnæus.*

THE PURPLE SANDPIPER.

Tringa maritima.

THE PURPLE SANDPIPER, though well known in this country, is not very numerous as a species, but is found on various parts of our coast, apparently preferring those which are rocky rather than extensive flats of sand. It is generally to be found from September throughout the winter till the following April or May, when the greater portion of them quit our shores, and pass in many instances to high northern latitudes for the breeding-season. The old birds, as in the instance of the Turnstone, are observed to be absent but a very short time from their usual haunts on the coast; young birds returning with them, or following soon after; and Mr. J. H. Gurney, jun., informs the Editor that on the 27th September, at Blakeney in Norfolk, he shot a young bird with some down still adhering to the neck. On the Farn Islands, on one occasion, Mr. Selby met with a family of this species, the young of which were scarcely able

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[*] Syst. Nat. Ed. 12, i. p. 248 (1766).

to fly, and it has been suspected of having bred there (*antea*, p. 290). On the 27th May, Major Feilden shot four specimens in Berneray and Mingalay, in the Hebrides, all females, one of which showed some abrasion of the belly and breast feathers, from which it was inferred that it had been sitting on eggs, and the ovaries of the birds were found to be much distended, although no mature eggs were found in them. Adult birds have been observed in many other localities late in May, and Saxby says that in Shetland he has had eggs brought to him exactly resembling authentic ones, but identified eggs taken in the British Islands are as yet unknown to the Editor.

The Purple Sandpiper is, however, more commonly observed in winter, when it may be seen busily employed turning over stones and searching among seaweed for the smaller shrimps and sandhoppers which are to be found there, and it also feeds on young crabs, marine insects, and the soft bodies of animals inhabiting small shells. Saxby says that flocks rarely consist of more than a dozen or fifteen individuals, and they frequently escape observation from the land owing to their habit of keeping on the seaward side of the rocks, or even sitting on the half-submerged fronds of the larger seaweeds. It may be seen on the strand during a gale, following up each retiring wave and nimbly avoiding the returning one, or clinging to the rock with its feet whilst half buried in the bursting spray. It is, however, an excellent swimmer, and in calm weather has been seen to voluntarily take to the water; it has even been stated that it dives for pleasure; but this Saxby doubts, saying that he has only known it do so when wounded and closely pursued.

The Purple Sandpiper is so generally distributed along the coasts of Great Britain that it would be needless to specify the counties in which it has been observed; and it has been known to straggle so far inland as to Dereham in Norfolk; and once, in summer, to Wilford Ferry, on the Trent. On the shores of Ireland, in winter and up to the latter part of May, it is abundant in suitable localities.

It breeds in considerable numbers no farther off than the Færoes, especially on Sandoe; and northwards, in Iceland, Greenland, Spitsbergen, Novaya Zemlya, and in fact throughout the greater portion of the Arctic regions it is the most numerous of its genus. It nests in Finmark; and along the entire north and west coast of Norway, which is under the influence of the Gulf Stream, it winters, according to Mr. Collett, in countless thousands, although it rarely goes up the large fiords. Mr. Dann remarks, that, "unlike the others of this tribe, the Purple Sandpiper does not altogether quit the Scandinavian coast in winter: as the ice accumulates and the sea freezes up, it betakes itself to the outermost range of islands and rocks with which that coast is so numerously studded, feeding among the seaweed left bare by the slight fall of the tide, or the marine insects which it finds at the edge of the water. I have procured specimens throughout the winter on the Swedish coast, and during very severe frosts. It is perfectly fearless. During windy weather, when not feeding, it seeks shelter in the crevices of the rocks. Its plumage in winter is very thick, and the bird appears much larger than in summer." In the Baltic, however, it appears to be uncommon at any season, and it is only in mild winters that it remains on the coast from Denmark to Belgium. To the shores of France and the Iberian Peninsula it is a well-known visitor, and it may possibly breed high up on the mountains in the Azores, as Mr. Godman shot a male in full summer plumage on the island of Flores in June. On the inland waters of the Continent it is of very rare occurrence, and along the northern shores and on the islands of the Mediterranean, as far east as Greece and the Cyclades, it has been observed, but it is by no means common; nor did M. Alleon obtain it on the Black Sea. To the east of Novaya Zemlya, where it is common, no one has obtained it in Asiatic Siberia, with the exception of Middendorff, who shot three specimens on the 9th August in 75° N. lat., but never saw the species again: until the shores of Behring's Straits are reached, when it is again met with. In Africa the solitary record of its occurrence rests on the authority of Dr. O.

Finsch, who says he has examined an example from the Cape of Good Hope (Abh. naturw. Ver. Bremen, iii. p. 65), but perhaps there may be some error as to the locality.

In North America the Purple Sandpiper is found breeding throughout the greater part of the Arctic regions, with the exception of Smith's Sound, where Major Feilden did not observe it on the last British Expedition, and it is perhaps by way of the Yukon and Alaska that visitors reach the Asiatic side of Behring's Straits. It is found on the chain of the Great Lakes, and on the east coast it is common in winter as far as the Middle States; it also visits Bermuda.

The nest of the Purple Sandpiper is tolerably compact and well made, placed deep in the ground, and, in Spitsbergen, lined with the leaves of the dwarf birch, *Betula nana.* In the circumpolar regions its nest is frequently placed close to the sea-shore, but in the Færoes the late John Wolley, and afterwards Major Feilden (Zool. 1872, p. 3250), found it on the fells; one being taken by the latter on the 20th May, when deep snow was still lying in the sheltered spots, and the tops of the hills were white. The eggs, four in number, are greenish-grey with purplish under-shell markings and reddish-brown surface-blotches: the average measurements are 1·45 by 1 in. It would appear that the female takes a share in the duties of incubation, but Mr. Collett says that in Finmark he never found any but males in attendance on the broods. The stomachs of those which he shot in summer had the remains of insects, principally *Otiorhynchus blandus;* whilst one obtained in November contained the young of *Litorina* and *Mytilus edulis,* together with the seeds of a sea-shore plant. Saxby found it feeding on a minute vegetable substance which grew upon the small stones in trickling water. Its note is a faint *weet wit.*

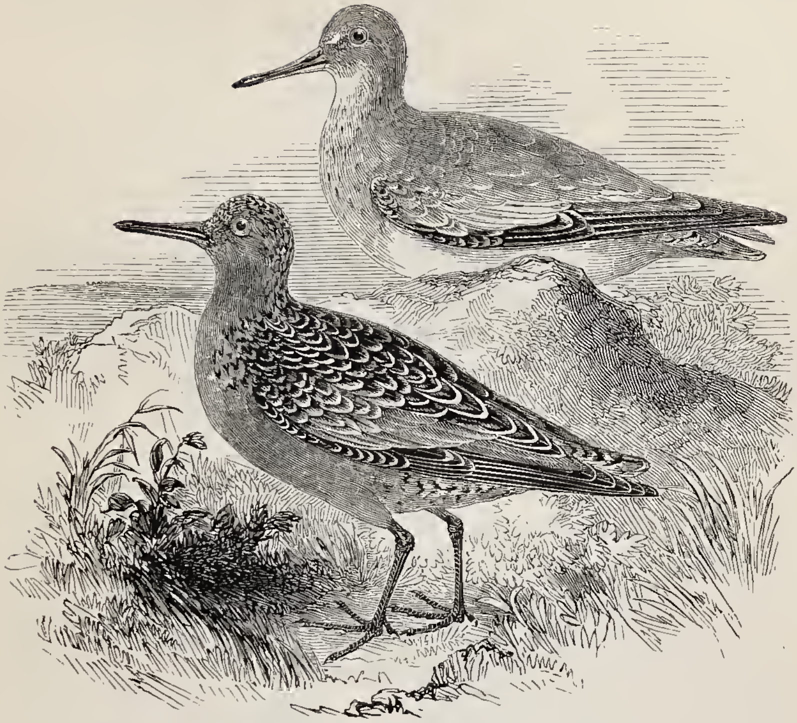
The prevailing bluish-lead colour of this species in winter at once distinguishes it from every other British Sandpiper.

The adult in summer has the beak dark brown at the tip, yellow at the base; the irides hazel; the head and neck all round dusky-grey, streaked with darker grey; back, scapulars, and tertials, bluish-black: some of the feathers margined with white, others with reddish-buff; wing-coverts dove-grey, with lighter-coloured margins; primaries dusky-black, the shafts white, the outer narrow web of each feather darker than the broader innner web; secondaries tipped with white; upper tail-coverts almost black; middle tail-feathers brownish-black, long and pointed, the others ash-brown with lighter-coloured edges; chin white; breast nearly white, spotted with grey; vent, and under tail-coverts white, with an occasional streak of grey; legs and toes ochreous-yellow, the hind toe directed inwards; the claws black.

The whole length is eight inches and a half. From the carpal joint of the wing to the end of the first quill-feather, which is the longest, five inches. The females are rather larger than the males.

A bird killed in November has the head, neck, back, and upper tail-coverts, uniform lead-grey; the wing-coverts and tertials only with greyish-white edges; the under surface changing from bluish-grey to white. In another specimen killed later in the year, the breast and all the under parts are nearly white, with a few spots of grey.

In the downy nestling the upper parts are of a warm rufous-brown, with darker streaks and waved lines of grey on the crown, nape, and cheeks; a well-defined black V has its apex at the base of the bill on each side; under parts dull white tinged with buff.



Tringa canutus, Linnæus.*

THE KNOT.

Tringa canutus.

The Knot is by no means an uncommon bird in the British Islands from autumn through the winter to the spring. In the L'Estrange and Northumberland Household Books so frequently quoted 'Knotts' or 'Knottes' are mentioned on several occasions, and as an article of diet the bird was evidently appreciated in the early part of the sixteenth century. Camden, in the edition of his 'Britannia' bearing date 1607, but not in previous ones, gives it as his opinion that the name was connected with

* *Tringa Canutus* Linnæus, Syst. Nat. Ed. 12, p. 251 (1766).

King Canute, and this derivation, which after all is the best which has yet been suggested, appears to have been generally accepted at and subsequently to that period. Thus Drayton in his 'Polyolbion' (1622), 25th song:—

> The *Knot*, that called was *Canutus* Bird of old,
> Of that great King of *Danes*, his name that still doth hold,
> His apetite to please, that farre and neere was sought,
> For him (as some have sayd) from *Denmarke* hither brought."

Willughby (1678) substantially gives the same reason for the name, and Pennant and later writers have but paraphrased the foregoing. Down to the latter part of the seventeenth century Knots were regularly fattened for the table, and Sir Thomas Browne describes how they are taken in nets, and "grow excessively fat, being mewed and fed with corn. A candle lighted in the room, they feed day and night, and when they are at their height of fatness, they begin to grow lame, and are then killed as at their prime and apt to decline." Willughby says that, "being fed with white bread and milk, they grow very fat, and are accounted excellent meat."

A few old birds, probably barren ones, in somewhat faded summer plumage are to be seen, according to Mr. Cordeaux, on the coasts of Lincolnshire in July; and in the first week in August the young birds make their appearance, their parents arriving, as a rule, somewhat later. A considerable number of the migrants remain until the middle of the following May, by which time they have either partially or entirely assumed the fine red tints of plumage peculiar to their breeding state. From the south still more richly-coloured adults arrive about this time, and the entire body take their departure for the north, only a few odd birds remaining until later, or throughout the summer. A specimen in full breeding-plumage is mentioned by Mr. R. Gray as having been shot on Islay on the 30th July, 1870, probably on its return. In the northern portions of our islands comparatively few remain during the winter if the weather prove at all severe, but when such is the case, large accessions arrive from abroad. Nowhere are they more numerous than on the extensive sand banks and mud flats left bare by the receding tide in the Humber district, and Mr. Cordeaux has described (Zool. 1866, p. 75) the assemblage and movements of thousands upon thousands observed towards sunset on the 4th of November. The Knot is generally distributed along our coasts, with the exception of the west of Scotland and the Hebrides, where, according to Mr. R. Gray, it is comparatively uncommon. In Ireland it is common in spring and autumn, many remaining the winter, in the tidal harbours and estuaries; and Sir R. Payne-Gallwey says that he once killed a hundred and sixty Knots on a sand bank at a shot from his big gun, having mistaken them on a dark evening for Plovers. From a resemblance to the latter, this species is, indeed, not unfrequently spoken of by fowlers as the 'Plover-Knot.' On the autumnal migration birds sometimes come round and strike against the lanterns of lighthouses; and the telegraph wire has occasionally proved fatal.

The Knot visits Iceland in large numbers in May, but there is no authenticated instance of its having bred there. In the small portion of East Greenland which has as yet been visited it was not found, nor does it tarry long in the southern districts of that great Peninsula, but beyond 68° N. lat. it becomes more numerous. In 1820, on Parry's first voyage, Sabine found it breeding in great abundance on Melville Island in the North Georgian or Parry group (Supp. to Appendix, cci.); and on Parry's second voyage (Narrative, p. 461) Knots were observed breeding near Quilliam Creek, Melville Peninsula, between the 6th and 17th July, 1823, by the late Captain Lyons of H.M.S. 'Hecla,' who states that they lay four eggs on a tuft of withered grass, without being at the pains of forming any nest. In the Fauna Boreali Americana (Birds, p. 387), Richardson says the Knot breeds in Hudson's Bay and down to the fifty-fifth parallel; the eggs are described on the authority of Mr. Hutchins as "of a dun colour fully marked with reddish spots"; but the accuracy of these statements has not yet been corroborated.

The late Surgeon Anderson of H.M.S. 'Enterprise' shot a female bird in Cambridge Bay, lat. 69° N., on the 9th July, 1853; but none of these earlier explorers appear to have brought back any eggs of the species.

On the late Arctic Expedition Major H. W. Feilden, naturalist to H.M.S. 'Alert,' when camped on Grinnell Land, in 82° 33′ N. lat., on 5th June, 1876, observed the arrival of a flock of about fourteen, which alighted on bare patches and fed eagerly on the buds of *Saxifraga oppositifolia*. Subsequently the birds arrived in considerable numbers, beginning to mate immediately, and at times two males might be seen following a single female; at this season they soar high in the air like the Common Snipe, and when descending from a height beat their wings behind the back with a rapid motion which produces a loud whirring noise. On the 30th July, 1876, an old bird accompanied by three nestlings was obtained on the border of a small lake not far from the 'Alert.' The old bird proved to be a male; its stomach, and those of the young ones, were filled with insects (Ibis, 1877, p. 407). Mr. H. Chichester Hart, naturalist to H.M.S. 'Discovery,' obtained in 81° 44′ N. lat. a brood of four, disturbed from the nest, on the 11th July. The nest was placed under a large flat stone, resting on two others, which formed a sort of gangway; it was merely of leaves and dry grass, loosely laid together on the earth by the edge of a stream; but no trace of the eggshells was found. Upon the following day three more young were caught; these were apparently a couple of days out of the shell, grotesque little things, very lively and active, with large dark eyes, the body very small, and the wing-pinions just showing. Their feet were almost as large as those of the full-grown bird, and they were able to run at a marvellous rate. Both the young broods were found three or more miles inland, and in each case close to a stream (Zool. 1880, p. 205). A pair of adults and three downy nestlings form a beautiful mounted group in the Natural History Department of the British Museum.

The distribution of the Knot in the Arctic regions is far less general than that of many of its congeners. It has not been found in Spitsbergen, or in Novaya Zemlya, and Henke's statement (Ibis, 1882, p. 381) that it had been "seen in summer at the mouth of the Dwina, evidently breeding," requires confirmation. Messrs. Seebohm and Harvie-Brown did not obtain it on the Petchora, nor did the former meet with it on the Yenesei. On the famous Taimyr Peninsula, Middendorff found a solitary example, dead, on the 30th August; and only two were seen and obtained on the Boganida, on the 27th May; although a large number are said to have been seen in July, near the mouth of the Udá. The latter may have been immature *T. crassirostris*, a bird of about the same size, but which has a black breast in breeding-plumage; and which as a rule replaces the Knot in Eastern Asia. On the Amoor Dr. Schrenck obtained two specimens of our Knot, and Dr. Dybowski got one in Dauria; identified examples are recorded by Messrs. Blakiston and Pryer from Japan, and from Shanghai in China, by Swinhoe. Returning to Europe: it is common on migration along the western shores, becoming rarer in, and to the east of, the Baltic; and it evidently crosses the Continent by more than one route, as, although rare from Italy eastwards in the Mediterranean, it occurs on the Black Sea. In Spain thousands of birds in breeding-plumage arrive in May, especially at the mouth of the Guadalquivir. The migrations of the Knot can be traced along the West Coast of Africa as far as Damara Land; but the only authority for its occurrence on the eastern side is Vierthaler, who states that he observed it on the Blue Nile. It is not included amongst the migrants across the great Asian ranges; it has only thrice been recorded in India, and the bird obtained by Jerdon at Madras is believed by Mr. Hume to have been *T. crassirostris*, which replaces our bird throughout the Malayan and Papuan sub-region; but undoubted specimens of our Knot have been obtained in Australia and New Zealand in winter plumage.

In America the Arctic range of the Knot has already been traced to the Parry Islands. Continuing westward, it probably occurs in summer along the entire coast, as it was obtained at Point Barrow in the extreme north of Alaska on the 5th July, 1882, and farther south it has been recorded from the mouth of the Yukon and from Sitka. On migration it visits British America, and the east coast and inland waters of the United States; and an example has been obtained as far south as Brazil (Ibis, 1874, p. 319).

The food of the Knot consists largely of the small inhabitants of bivalve shells of the genera *Rissoa* and *Turbo*, and Mr. Adamson says that some which he received from the fens had been feeding on maggots. One obtained at Discovery Bay contained two caterpillars of *Dasychera groenlandica*, one bee, and pieces of an Alga. In its habits, especially on its first arrival on our coasts, it is remarkable for its absence of fear. It has never been known to breed in captivity, although individuals in the Gardens of the Zoological Society have fully assumed their ruddy summer plumage, and have even retained it later in the autumn than is usual with wild birds.

An albino specimen of the Knot shot near Maldon, in Essex, on the 13th of February, 1851 (Zool. p. 3116), is in the collection of Mr. F. Bond.

A male in perfect summer plumage obtained from Yarmouth so late in the season as the 25th of May, 1820, and from which the figure in the front of the illustration here given was drawn, has the beak black; the irides hazel; cheeks and round the eye chestnut-red, with a few dark brown spots between the beak and the eye, and on the ear-coverts; the forehead, top of the head, and the back of the neck, reddish-brown, streaked with dark brown; back, scapulars, smaller wing-coverts, and tertials, black, margined with reddish-brown and white; greater wing-coverts ash-grey; primaries greyish-black, with white shafts; secondaries edged with white; rump and upper tail-coverts white, tinged with red, with crescentic bars of black and edged with white; tail-feathers ash-colour, darker near the margin, and edged with white; chin, neck, breast, and belly, nearly uniform rich reddish-chestnut; flanks, vent, and under tail-coverts, white, tinged with red and spotted with black; legs, toes, and claws, blackish.

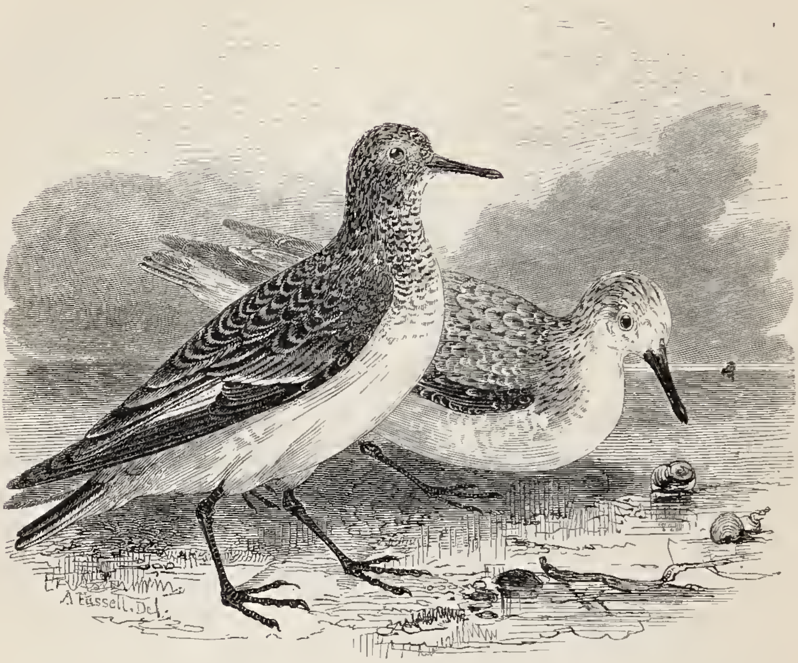
The whole length of an adult bird is ten inches; from the carpal joint to the end of the first quill-feather, which is the longest in the wing, six inches and a half. Average weight $4\frac{1}{2}$ oz.

Young birds of the year in autumn have the upper surface of the body ash-grey, each feather with two narrow half-circular bands near the end, the first of greyish-black, the ultimate band buffy-white, later in the season pure white; the neck white, streaked with grey; the breast dull white, tinged with reddish-buff.

Adult birds in winter have all the upper surface of the body and the wing-coverts uniform ash-grey; wing-primaries as in summer; all the front of the neck, the breast, and under surface of the body, white, slightly streaked with grey. The tarsi and feet are then greenish, owing to which the birds are known in Norfolk by the redundant epithet of "green-legged shanks."

The newly-hatched bird is described by Major Feilden as follows:—"Iris black; tip of mandibles dark brown, bill dark olive; toes black, soles of feet greenish-yellow; back of legs the same; under part of throat satin-white; back beautifully mottled tortoise-shell" (Ibis, 1877, p. 408).

LIMICOLÆ. *SCOLOPACIDÆ.*


A. Fussell, Del.

Calidris arenaria (Linnæus*).

THE SANDERLING.

Calidris arenaria.

Calidris, *Illiger* †.—Beak as long as the head, straight, slender, flexible, compressed at the base, with the point dilated and smooth. Nostrils basal, lateral, narrow, longitudinally cleft in the nasal furrow, which extends to the smooth point of the beak. Wings of moderate length, pointed, the first quill-feather the longest. Tail of twelve feathers, short, doubly emarginate. Legs rather short, naked for some distance above the tarsal joint. Feet with only three toes, all directed forwards, with a very small connecting membrane at their base.

The Sanderling—represented by the figure in front in its summer dress, and by that behind in the grey plumage peculiar to winter—is pretty well known on most of the sandy shores of the seas of Great Britain and Ireland, where it is usually found, at the edge of the water, in company with the Dunlin, but is not so plentiful. It is also seen at times associated with the smaller Plovers, which it resembles in its habits, frequenting the harder parts of the sandy shore, running or flying with equal ease and rapidity. Athough occasionally found in the vicinity of large pieces of fresh water, it is essentially a frequenter of sandy localities, and is seldom to be seen upon those soft muddy flats to which many other Sandpipers are so partial.

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* *Tringa Arenaria*, Linnæus, Syst. Nat. Ed. 12, i. p. 251 (1766).

† Prodromus, p. 249 (1811).

Owing to the absence of the hind-toe this species was formerly placed amongst the *Charadriidæ*, but its right to be classed with the *Scolopacidæ* is now generally admitted. It is in fact a *Tringa* without a hind-toe.

The Sanderling, on leaving its northern breeding-grounds, arrives on our coasts during the last days of July, or early in August; and, contrary to the usual rule among the Waders, the early flocks are frequently composed of both old and young birds. Throughout the autumn it is abundant in suitable localities along the greater part of our coasts, but the majority continue their southward course, and comparatively few remain on our northern shores during the winter. By April the return migration commences, and birds in full breeding-plumage may be observed throughout May, and even in June: a female shot by Saxby on the 10th of the latter month containing ova as large as No. 3 shot. There is not, however, the slightest evidence that the bird has ever bred in any part of the British Islands.

In the Færoes the Sanderling appears to be a somewhat rare migrant, but in Iceland it no doubt breeds, for an egg purchased there in 1858 by the late Mr. John Wolley and Professor Newton, resembles authentic eggs from other localities. According to Holböll, the bird was observed by Graah on the east coast of Greenland, but it is not mentioned in his list. The German North-Polar Expedition under Capt. Koldewey, however, obtained ten of its eggs on Sabine Island on the east coast, and on the western side young have been taken at Godthaab. Dr. Bessels, of the 'Polaris,' obtained nestlings in 81° 38′ N. lat.; and Major Feilden, naturalist to H.M.S. 'Alert,' found a nest containing two eggs, on which the male bird was sitting, on the 24th June, 1876, in lat. 82° 33′ N., in Smith's Sound, where it was not uncommon. On Parry's first Arctic Expedition it was described by Sabine as breeding in considerable numbers on the North Georgian or Parry Islands. The first authenticated eggs on record appear to have been obtained by Mr. MacFarlane when collecting for the Smithsonian Institution on the Barren Grounds near the Anderson River, the parent bird—the female in this case—having been shot from the nest. Westward its range extends to Alaska and the Pribilov Islands. Following up its circumpolar distribution, it occurs in the breeding-season along the Arctic coasts of Asiatic Siberia, the ill-fated 'Jeannette' party having found it in considerable numbers on Thaddeus Island, one of the Liakhov group, on the 30th August, 1881; Middendorff found it on the Taimyr up to 74° N. lat.; it was observed by Von Heuglin on Novaya Zemlya and Waigats; and it probably breeds near the mouth of the Petchora, where Messrs. Seebohm and Harvie-Brown shot it, although time did not permit of a successful search for its eggs. On the coasts of Northern Europe (with the exception of the Baltic, where it is scarce), the Sanderling is more or less abundant on passage, and it is tolerably common on the shores and islands of the Mediterranean. Visiting the Canaries and Madeira, its migrations down the west side of Africa extend to Cape Colony; and, on the east, it passes along the Red Sea and continues to Natal and Madagascar. It is common in winter along the Mekran coast, at Kurachee, and in the Gulf of Kutch, but in Southern India it has seldom been observed, and it has only recently been recorded from Ceylon. In the Eastern Archipelago it cannot at present be traced farther south than Borneo and Java; it is a regular visitor to the east coast of China, and it has occurred in Japan, and the Kuril Islands.

In America, south of its Arctic breeding-grounds, it occurs on migration along the greater part of the coast, and, including the West Indian Islands, it is found down to Tombo

Point, Patagonia, on the east side; whilst on the Pacific it ranges as far south as Chili.

The nest of the Sanderling from which Major Feilden shot the male bird was placed on a gravel ridge, at an altitude of several hundred feet above the sea, and the two eggs were deposited in a slight depression in the centre of a recumbent plant of willow, the lining of the nest consisting of a few withered leaves and some of the last year's catkins. The two eggs figured in Major Feilden's Appendix to Sir G. Nares' Narrative, ii. p. 210, are of a greenish-buff spotted with brown of various shades, and measure 1·4 by 1 in. Mr. Dresser has compared them to miniature Curlews' eggs of a pale colour. An egg taken on the Barren Grounds of the Anderson River from a nest composed of hay and decayed leaves, and figured by Prof. Newton (P.Z.S. 1871, pl. iv. fig. 2), is somewhat darker in colour: its measurements are given as 1·43 by ·98 in.

The Sanderling obtains its food principally by probing the moist sands of the sea-shores, and the contents of the stomach of those shot while thus occupied, were slender sea-worms, minute shell-fish, gravel, and crustacea. Major Feilden observed that, like other waders in the Arctic regions, the Sanderling fed upon the buds of *Saxifraga oppositifolia*. The fat on the body is sometimes nearly a quarter of an inch in thickness.

An adult male in summer plumage, killed on the 12th of June, the bird from which the figure was drawn, had the beak black; irides brown; the feathers on the top of the head and back of the neck black in the centre, edged with rufous; interscapulars, scapulars, tertials, back, and rump, black, each feather edged with red; wing-coverts greyish-black; wing-primaries black on the outer web, greyish-white on the inner web, the shaft white; middle tail-feathers rather pointed and greyish-black, the others greyish-white; chin, throat, sides of the neck, and upper part of the breast, covered with small spots of rufous and black on a white ground; all the under surface of the body and wings pure white; axillary plume white; legs, toes, and claws, dark olive (drying black); under surface of the toes dilated and flat. In this state of plumage it is the Ruddy Plover of some authors.

The female is, as a rule, slightly larger than the male, and somewhat less rich in the colour of its summer dress. Sabine goes so far as to say that "in several pairs killed at different periods of the breeding-season, the males and females were invariably found to differ in their plumage; the general colour of the female being lighter, and having more cinereous and less of black and reddish marking than that of the male: this is especially the case on the chin, throat, and fore part of the neck; which may be described in the female as white, with a very slight sprinkling of dark spots, and scarcely any appearance of red; whereas in the males, the dark colours greatly predominate." No such difference, however, was observed by Major Feilden.

The whole length of an adult bird is about eight inches. From the carpal joint to the end of the wing, four inches and seven-eighths; the first quill-feather a little longer than the second, and the longest in the wing.

In winter the plumage on the upper surface of the body is of a very light ash-grey, almost white, the shaft of each feather forming a darker streak; carpal portion of the wing and the primary quill-feathers almost black; tail-feathers ash-colour, edged with white; chin, throat, and all the under surface of the body, white; beak, legs, toes, and claws, blackish.

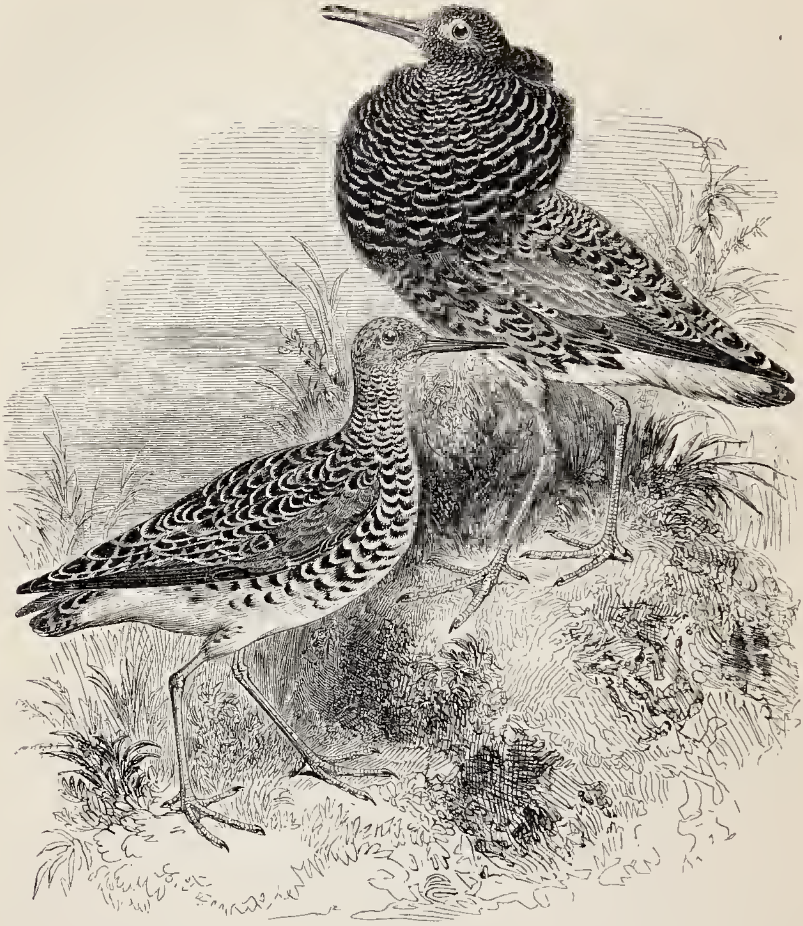
The appearance of the Sanderling in spring when changing to the plumage of summer, is prettier than at any other season; each feather on the upper surface of the body exhibits a portion of black in the centre, edged partly with rufous and partly with the remains of the white peculiar to winter; by degrees the white edging gives place to the red; the neck in front becomes speckled, but the under surface of the body remains white all the year.

A female killed at the end of August had the upper surface of the body darker than in the spring, but mixed with dull black, some red, and greyish-white; almost all the red colour of the breeding-season had disappeared, but the autumn moult having commenced, a few of the greyish-white feathers of the winter plumage appeared intermixed with the faded remains of the tints of summer. A bird killed on the 25th of October had completed its winter dress.

A bird of the year in the plumage previous to its first autumn moult, had the crown of the head, back, scapulars, and wing-coverts, black, edged with yellowish-white ; a brown streak in front of the eye ; nape, sides of the neck, and sides of the breast, pale grey, with wavy streaks ; forehead, throat, fore part of the neck, and all the under parts, pure white : wings and tail as in the adult.

A young bird in half-down, obtained at Grinnell Land on the 8th August, 1876, had the upper parts darker, the markings smaller, and of a warm buff-colour, as are also the lower throat and sides of the neck. It is figured in Mr. Dresser's 'Birds of Europe,' viii. pl. 559.

Varieties of this species are rare, but Mr. C. M. Adamson has recorded a white one, apparently a young bird of the year, shot at Holy Island, Northumberland, on the 28th August, 1879.



MACHETES PUGNAX (Linnæus*).

THE RUFF.

Machetes pugnax.

MACHETES, *Cuvier*†.—Bill straight, rather slender, as long as the head, with the tip dilated and smooth; upper mandible laterally sulcated for four-fifths of its length; culmen rounded. Nostrils basal, lateral, linear, placed in the commencement of the groove. Wings long and pointed, the first quill-feather the longest. Legs moderate, the tibia naked for a considerable space above the

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[*] *Tringa Pugnax*, Linnæus, Syst. Nat. Ed. 12, i. p. 247 (1766).

[†] Règne Animal, i. p. 490 (1817).

tarsal joint. Toes, three before and one behind; the outer toe united to the middle one by a small web; hind toe short, barely touching the ground. During the breeding-season the head and neck of the male are adorned with long plumes, which, when raised, form a large ruff around the head, and the face is covered with small fleshy warts or papillæ.

The Ruff differs in so many points from the species included in the genera *Totanus*, *Scolopax*, and *Tringa*, that the generic division and term, *Machetes*,* in reference to its pugnacious habits, proposed for it by Cuvier, has been admitted by the majority of systematic writers. This species, which up to the present time is the only one of the genus known, is distinguished by the periodical assumption by the males of the *ruff* about the neck, which has led to the English name. Scarcely any two males have the ruff alike, while the females are uniform in colour, or nearly so; the males are polygamous, and about one-third larger than the females, in both of which points the Ruff differs from the characters of the genera named.

The Ruff may now be considered as only a passing visitor to this country, making its appearance in April and departing again in autumn, at which time the young birds of the year, in small flocks, are also seen, and single birds are occasionally killed in winter. Formerly many Ruffs and Reeves, the latter being the name applied to the female, remained with us during the summer, and bred in the fens of Somersetshire, Cambridgeshire, Huntingdon, Norfolk, and Lincolnshire; but the two latter are the only counties in which it has been known to nest of late years. Drainage, and the spread of cultivation over its favourite haunts, are perhaps the main reasons, but its wholesale capture in spring for the tables of the rich, when 'game' is out of season, is also responsible for a diminution which cannot be repaired by the mere existence during the past few years of an effete Wild Birds' Preservation Act.

Early in the present century Montagu made a tour through Lincolnshire, that he might become intimately acquainted with all the history of this singular species that could be obtained. He found that the birds were much more scarce than they had been before a large tract of the fens was drained and enclosed, and would probably, as agriculture increased, be entirely driven from the island. A few were still found about Crowland, but the north fen near Spalding and the east and west fens between Boston and Spilsby, were the only parts that appear to produce them with certainty, but by no means plentifully. He continues :—"The trade of catching Ruffs is confined to a very few persons, and scarcely repays their trouble and the expense of nets. These people live in obscure places on the verge of the fens, and are found out with difficulty, for few, if any, birds are ever bought but by those who make a trade of fattening them for the table. Mr. Towns, the noted feeder at Spalding, assures us his family had been a hundred years in the trade; that they had supplied George the Second and many noble families in the kingdom. He undertook, at the desire of the late Marquis of Townshend, when that nobleman was Lord Lieutenant of Ireland, to take some Ruffs to that country, and actually set off with twenty-seven dozen from Lincolnshire, left seven dozen at the Duke of Devonshire's at Chatsworth, continued his route across the kingdom to Holyhead, and delivered seventeen dozen alive in Dublin, having lost only three dozen in so long a journey, confined and greatly crowded as they were in baskets, which were carried upon two horses. During our stay at Spalding we were shown into a room where there were about seven dozen males and a dozen females, and of the former there were not two alike. Our intrusion to choose some birds drove them from their stands, and, compelling some to trespass upon the premises of others, produced many battles. It is a remarkable character of these birds that they feed most greedily the moment they are taken; a basin of bread and milk, or boiled wheat, placed before them is instantly contended for, and so pugnacious is their disposition, that they would starve in the midst of plenty, if several dishes of food were not placed amongst them, at a distance from each other. Their actions in fighting are very similar to those of a game cock: the head is lowered and the beak held in a horizontal direction; the ruff, and indeed every feather, more or less distended, the former sweeping the ground as a shield to defend the more tender parts; the auricles erected, and the tail partly spread, upon the whole assuming a most ferocious aspect. When either could obtain a firm hold with the bill a leap succeeded, accompanied by a stroke of the wing; but they rarely injured each other.

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* Pugnator.

"Few Ruffs, comparatively speaking, are taken in the spring, as the old birds frequently pine, and will not readily fatten. The principal time is in September, when the young birds are on the wing; these are infinitely more delicate for the table, more readily submit to confinement, and are less inclined to fight. If this plan was generally enforced by the proprietors of fen-land, or made a bye-law amongst themselves, the breed would not be so reduced; but there are still fowlers who make two seasons, and by catching the old birds in the spring, especially the females, verify the fable of the goose and the golden eggs: the destruction of every female in the breeding-season is the probable loss of four young.

"The manner of taking these birds is somewhat different in the two seasons: in the spring the Ruffs *hill*, as it is termed, that is, they assemble upon a rising spot of ground, contiguous to where the Reeves propose to deposit their eggs; there they take their stand, at a small distance from each other, and contend for the females—the nature of polygamous birds. This hill, or place of resort for love and battle, is sought for by the fowler, who from habit discovers it by the birds having trodden the turf somewhat bare, though not in a circle as usually described. When a hill has been discovered, the fowler repairs to the spot before the break of day, spreads his net, places his decoy birds, and takes his stand at the distance of about one hundred and forty yards, or more, according to the shyness of the birds. The net is what is termed a single clap-net, about seventeen feet long and six feet wide, with a pole at each end; this, by means of uprights fixed in the ground, and each furnished with a pulley, is easily pulled over the birds within reach, and rarely fails taking all within its grasp; but in order to give the pull the greatest velocity, the net, if circumstances will permit, is so placed as to fold over with the wind; however, there are some fowlers who prefer pulling it against the wind for Plovers. As the Ruffs feed chiefly by night, they repair to the frequented hill at the dawn of day, nearly all at the same time, and the fowler makes his first pull according to circumstances, takes out his birds, and prepares for the stragglers who traverse the fens and have no adopted hill; these are caught singly, being enticed by the stuffed birds. These stuffed skins are sometimes so managed as to be movable, by means of a long string, so that a jerk represents a jump, a motion very common among Ruffs, who at the sight of a wanderer flying by, will leap, or flit a yard off the ground, by that means inducing those on wing to come and alight by him.

"When the Reeves begin to lay, both those and the Ruffs are least shy, and so easily caught, that a fowler assured us he could with certainty take every bird in the fen in the season. The females continue this boldness, and their temerity increases as they become broody; on the contrary, we found the males at that time could not be approached within the distance of gun-shot. The females, the Reeves, begin laying their eggs the first or second week in May; and we have found their nest with young as early as the 3rd of June. By this time the males cease to go to *hill*."*

Montagu took the trouble of transporting several of these birds, both males and females, with him from Lincolnshire into Devonshire; some of them lived three years in captivity, and one of them four years; the changes they underwent will be noticed under the description of plumage. Montagu says, that "in confinement the males paid no attention to the Reeves, except to drive them from their food; they never attempted to dispute with any other species, but would feed out of the same dish with Land Rails, and other birds confined with them, in perfect amity."

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* Abridged from the Supplement to the Ornithological Dictionary (1813).

The late Rev. R. Lubbock, in his 'Fauna of Norfolk,' has also given an interesting account of the behaviour of the Ruffs in spring, when their 'hill' being over, they disperse themselves about the marsh in search of females. A Reeve circling round her nest will then put in motion three or four Ruffs. The males seem to be much inconvenienced by the collar of long feathers which obstructs their flight, rendering it slow and laboured, but, relieved of this by the autumn moult, their flight becomes powerful and glancing like that of the female.

In Norfolk it is possible that a pair or two may still nest, in spite of the incentives held forth by collectors of British-taken eggs; and in Lincolnshire, as the Editor is informed by Mr. Cordeaux, a nest containing two eggs was taken, and the female shot—in flagrant contravention of the law—in 1882, in a locality where the species had been in the habit of breeding. In Yorkshire it no longer breeds; and since the drainage of Prestwick Car, it has scarcely been known to nest in Northumberland. On the west coast of England it occurs on migration; and Mr. Adamson once obtained a nest at Brough Marsh, in the Solway. It visits the eastern side of Scotland, from Berwick to the Orkneys and Shetlands, but is very rare on the west; and in Ireland its arrivals have principally been noticed on the east coast, seldom in the south: mostly in autumn.

The extreme north-western range of the Ruff appears to be Iceland, where it has occurred as a straggler. It breeds—in suitable localities—in Scandinavia, Russia, Northern and Central Poland, and along the coasts of North Germany, Holland, Belgium, and the north of France. To the rest of Europe it is principally known on its double migrations, and its winter-quarters commence on the southern side of the Mediterranean. On the flooded fields of Egypt it is found from August to May; and through Nubia, and Abyssinia, where it occurs at an elevation of 10,000 feet, its course can be traced to Natal. On the west side of Africa, touching at Madeira, it ranges by Senegambia, Angola, and Damara Land, to Cape Colony. Andersson believed that in the Lake regions of the interior it was to be found throughout the year. In Asiatic Siberia the Ruff extends across the northern portion during the breeding-season up to 75° N. lat.; but in the south-eastern districts, and on the Amoor, it is rare, or unrecorded; it has, however, been obtained in the island of Yezo, Japan, but not in China. It visits Asia Minor, and Turkestan; crosses the Pamir, on the steppes of which Dr. Severtzoff fancies it breeds; visits the northern provinces of India in vast flocks during the winter; straggles to Ceylon; is tolerably abundant on the muddy shores of Northern Burmah; and has recently (Ibis, 1883, p. 86) been recorded from Labuan, in North-Eastern Borneo.

The Ruff has been known to straggle to North America, examples having been obtained in the States of Maine, Massachusetts, New York, and Ohio. Herr A. von Pelzen records (Ibis, 1875, p. 332) an abnormally coloured specimen, with plumage in a much worn and abraded condition, obtained in the district between the Upper Rio Negro and the Orinoco: the only recorded occurrence of the Ruff in the Neotropical region.

The nest of this species is placed in a tussock, generally in the wettest part of a swamp, and the eggs are three or four in number: of a pale green or olive colour, blotched and spotted with brown; the average measurements are 1·8 by 1·2 in. The young are somewhat less active and able to take care of themselves than the nestlings of most of the waders. The natural food of the Ruff consists largely of insects and their larvæ, and worms, with an admixture of fine gravel; but Mr. Collett found that the birds which he shot on the autumn passage near Christiania, had their stomachs filled exclusively with the seeds of a sea-shore plant. The note is a low *kack, kick, kack.*

The Ruff, in breeding-plumage, from which the engraved figure was taken, had the beak one inch and a half in length, and brown; the irides dusky-brown; the head, the whole of the ruff, or tippet, and the shoulders, of a shining purple black, transversely barred with chestnut; scapulars, back, lesser wing-coverts, and some of the tertials, pale chestnut, speckled and tipped with black; greater wing-coverts nearly uniform ash-brown; quill-feathers brownish-black, with white shafts; rump and upper tail-coverts white; tail-feathers ash-brown, varied with chestnut and black; the feathers of the breast, below the ruff, and on the sides, chestnut, tipped with black; belly, vent, and under tail-coverts, white, with an occasional spot of dark brown; legs and toes pale yellow-brown; claws black.

The whole length of the male is about twelve inches and a half. Wing, from the carpal joint to the end of the first quill-feather, which is the longest, six inches and a half. The weight of a Ruff is about six ounces, but a Ruff, when fatted, will weigh ten ounces.

Montagu says, "The long feathers on the neck and sides of the head, in the male, that constitute the ruff and auricles, are of short duration, for they are scarcely completed in the month of May, and begin to fall the latter end of June. The change of these singular parts is accompanied by a complete change of plumage; the stronger colours, such as purple, chestnut, and some others, vanish at the same time, so that in their winter dress they become more generally alike from being less varied in their plumage; but we observed that those who had the ruff more more or less white, retained that colour about the neck after the autumnal moulting was effected. We noticed that in confinement their annual changes never varied; every spring produced the same coloured ruff and other feathers, but the tubercles on the face never appeared.* A young male that was taken destitute of a ruff in the breeding-season, whose plumage was mostly cinereous, except about the head and neck, put on the ruff in confinement the next spring for the first time, which was large, and the feathers were a mixture of white and chestnut; the scapulars and breast also marked with chestnut; and in the succeeding autumnal moulting he re-assumed his former cinereous plumage."

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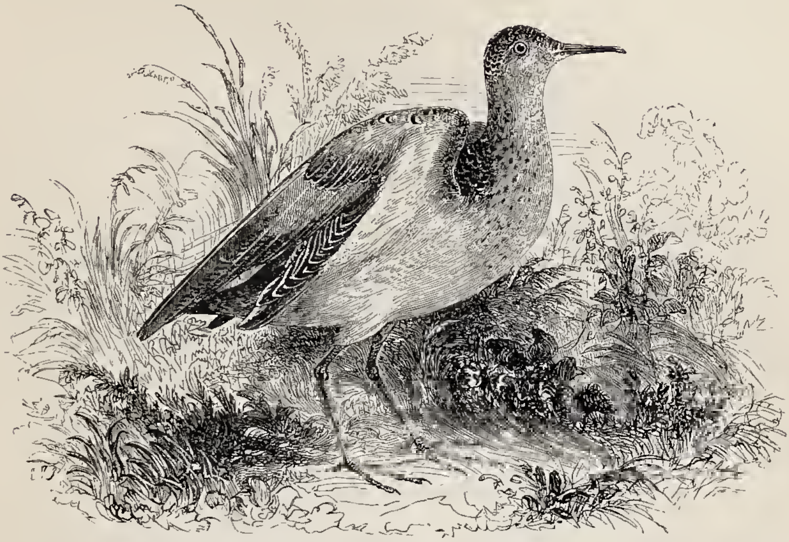
* In confirmation of this, Mr. A. D. Bartlett assures the Editor that in birds which had been carefully marked, the original colour of the ruff was always reproduced the following spring, as proved by a series of drawings by Mr. J. Wolf.

In a specimen, kept over two summers, at the Gardens of the Zoological Society in the Regent's Park, the moulting of the ruff commenced on the head and neck, about the 29th of March, 1832; the feathers on the body were not thrown off; the head and neck were left destitute of plumage, but the feathers of the body remained in a perfect state. The new ruff and head feathers appeared almost immediately, and were perfected by the 4th of May. This bird began to shed his ruff feathers on the 8th of June, and by the 6th of July he had lost them all.

A female, killed at the end of April, from which the representation was taken, had the beak one inch and a quarter in length, dark brown at the point, but lighter in colour at the base; irides dusky-brown; head and neck ash-brown, the centre of each of the small feathers darker than the margin, producing a spotted appearance; scapulars, back, wing-coverts, and tertials, nearly black, with broad ash-brown margins; some of the great wing-coverts and tertials barred transversely with pale reddish-brown; primaries dull black, with white shafts; secondaries edged with pale brownish-white; rump, and upper tail-coverts, brown; tail-feathers ash-brown, barred transversely with pale reddish-brown and black; chin greyish-white; feathers of the front of the neck, the breast, and sides, black in the centre, with broad greyish-white margins; belly, vent, and under tail-coverts, white; legs and toes pale yellowish-brown; claws black.

The whole length of a female is ten inches and a half. The wing, from the carpal joint to the end of the first quill-feather, which is the longest, six inches and a quarter.

In the nestling the upper parts are rufous-buff; crown black with a light central streak; two dark loral stripes meet at the nape, which is brown with a dark bar; a broad black streak down the middle of the back, and two lateral ones; under parts warm unspotted buff; bill black; legs pale brown.



TRYNGITES RUFESCENS (Vieillot*).

THE BUFF-BREASTED SANDPIPER.

Tringa rufescens.

TRYNGITES, *Cabanis* †.—Bill about as long as the head, slender, straight, decurved and obtuse at the tip; nasal groove long; nostrils basal, linear, rather large. Wings pointed, the first quill-feather the longest. Tail moderate, doubly emarginate. Legs moderate, slender, the tibia bare for a considerable distance; tarsus compressed, slender, scutellate, anterior toes scutellate, marginate; hind toe small, elevated; claws small, arched, slender, slightly acute.

THE Author had the gratification of obtaining the specimen of the interesting and prettily-marked Sandpiper, from which the figure above was taken, in the autumn of 1826, when at Royston; and soon afterwards made it known as a new visitor to England and Europe in the Transactions of the Linnean Society, xvi. p. 109, pl. 11. This bird was shot early in the month of September, 1826, in the parish of Melbourne, in Cambridgeshire, in company with some

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* *Tringa rufescens*, Vieillot, Nouv. Dict. xxxiv. p. 470 (1819).

† Journal für Ornithologie, 1856, p. 418

Dotterell (*Charadrius morinellus*); and passed immediately afterwards into the possession of Mr. Baker, of Melbourne, by whom the skin was preserved, and of whom it was purchased for the Author by Mr. John Sims. A few years afterwards, the latter, who had then removed to Norwich, obtained a second example of this species, killed at Sherringham, on the coast of Norfolk, and preserved it for the Museum at Norwich, where it still exists: the entry in the donation-book being that it was killed on the 29th July, 1832, and presented by Mr. Arthur Upcher. Since that time three specimens have been obtained in Norfolk—one shot at Yarmouth in the autumn of 1839 or 1840, which came into the possession of the late Mr. Heysham, of Carlisle*; one killed in the same locality on the 22nd September, 1841 (Zool. p. 182); and one obtained on the mud flats of Breydon, September 20th, 1843 (Zool. p. 263); the two latter being in the collection of Mr. J. H. Gurney (Stevenson, B. Norfolk, ii. p. 359).

For the knowledge of another specimen, the Author was indebted to the Rev. T. Staniforth, of Bolton Rectory, Skipton, in whose collection the bird is preserved, and who sent word that his example, which was a male, was killed at Formby, on the banks of the river Alt, about thirteen miles north of Liverpool, in May, 1829, and was sent to Liverpool market for sale along with some Snipes. Mr. F. Bond has recorded (Zool. p. 148) the occurrence of one upon the Sussex coast in 1843; it was much injured, badly preserved, and eventually had to be thrown away, but Mr. Bond kept the characteristic wings.

In Cornwall three examples have been recorded by the late Mr. Rodd:—one shot on the sands near Marazion whilst flying in company with Dunlins and Ring Plovers, on the 3rd September, 1846; one obtained at a pool on some high moorland near Chun Castle, Morvah, on the 8th September, 1860; and one at St. Bryher's, one of the Scilly Islands, in

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* Mr. F. Bond informs the Editor that he cannot find any mention of that specimen in the Catalogue of the sale of the late Mr. Heysham's collection on the 11th May, 1859.

September, 1870 (B. Cornwall, p. 100). Mr. D'Urban states (Guide to Exeter, p. 122) that one was killed on the Exe in August, 1851; and in the autumn of 1858 one was shot by Mr. Spencer Heaven at Lundy Island, in the Bristol Channel, and passed into the collection of Dr. Woodforde of Taunton.

In Ireland, as recorded by Mr. F. M'Coy (Ann. Nat. Hist. xv. p. 271), a specimen was obtained near Dublin, and is now in the Natural History Museum of that city; and two were obtained at Belfast in October, 1864 (Zool. 1866, p. 457). As regards Scotland, Mr. R. Gray says (B. of W. Scot. p. 319) that a specimen obtained in Caithness is still in the collection which belonged to the late Mr. Sinclair of Wick.

According to Vieillot, and Degland and Gerbe, a bird of the year killed near Abbeville in Picardy was in the collection of M. J. de Lamotte, but MM. Marmottan and Vian, in their recent catalogue of rare birds (Bull. Soc. Zool. Fr. 1879, p. 245), make no mention of it. In the collection of Mr. Gätke, of Heligoland, there is, however, an example killed on that island on the 9th May, 1847; and this seems to be the only authenticated occurrence in Europe beyond the British Islands.

The Buff-breasted Sandpiper's summer-haunts are in the Arctic portions of the American Continent. Specimens presented by Dr. Rae are in the British Museum, obtained at Repulse Bay, and at Fort Simpson, on the 14th of June; and it breeds abundantly in the Anderson River district and along the Arctic coast, where Mr. MacFarlane obtained many eggs. It has been obtained in June at Point Barrow, Alaska, but below Nelato, on the Yukon, according to Mr. Dall, it is rare, and it has only once been obtained at Sitka. At St. Michael's, Alaska, Mr. E. W. Nelson only obtained two in the course of four years, but he found it quite common at Cape Wankarem, on the *Siberian* side, early in August, 1881 (Cruise of the 'Corwin' p. 90).* Nuttall says (Man.

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* Middendorff (Sib. Reise, ii. p. 221) records one shot on the 30th June on the Sea of Okhotsk, but Mr. Harting thinks that this must have been *Tringa acuminata*, which has a buff breast in summer.

Orn. U.S. and Canada, ii. p. 113), "This elegant species, some seasons, is not uncommon in the market of Boston, in the months of August and September, being met with near the capes of Massachusetts Bay. My friend Mr. Cooper has also obtained specimens from the vicinity of New York. Its food, while here, consists principally of land and marine insects, particularly grasshoppers, which, abounding in the autumn, become the favourite prey of a variety of birds." But although generally diffused on migration throughout the United States, it is not as a rule abundant, and its visits are somewhat irregular. Vieillot originally described the species from a specimen obtained in Louisiana. Mr. Dresser found it in small flocks of from six to a dozen individuals in August, 1863, near Matamoras in Mexico, close to the frontier of Texas, and also between the former and San Antonio de Bejar in Texas itself, but Dr. Heerman said he had not observed it there for several seasons. The birds obtained were very fat, and delicious eating; they never seemed to frequent the edge of the small ponds, but preferred the sandy plains, and the dry tracks made by the cotton-teams; the call-note was low and weak. Canon Tristram obtained a specimen in the Bermudas on the 14th November, 1848; it has occurred in Cuba; and in South America it has been recorded from Colombia, the Upper Amazon, Brazil, and the shores of the Rio de la Plata, the latter being apparently the southern limit of its migration.

According to Dr. E. Coues, who has examined at least a dozen sets, taken by Mr. MacFarlane, the eggs of the Buff-breasted Sandpiper are usually four in number, of a clay-coloured or greyish ground, with bold blotches and spots of rich umber-brown; the average measurements appear to be 1·45 by 1 in. The nest is a slight depression in the ground, lined with a little grass or a few leaves.

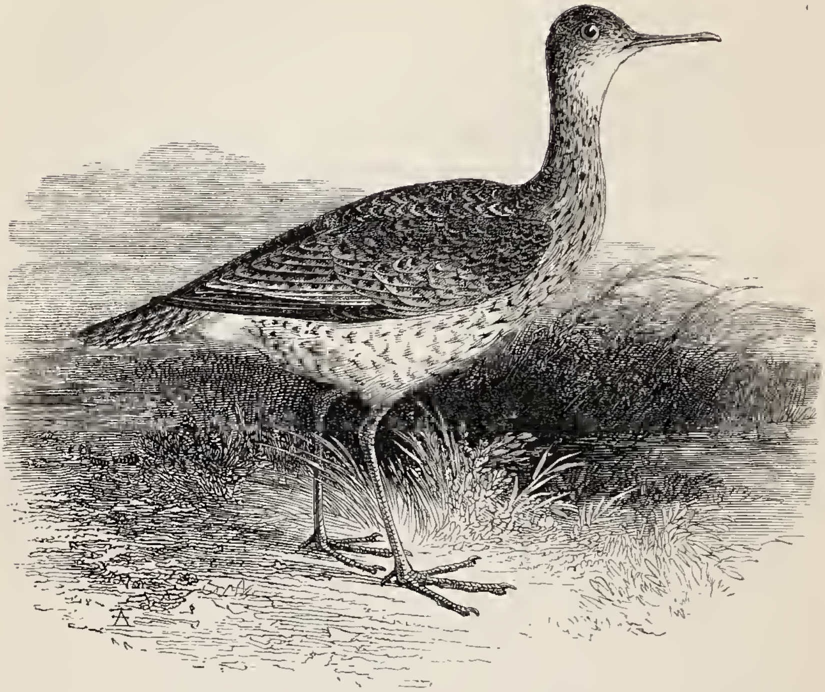
This species is readily distinguished from all the other birds of this genus by the peculiar markings of the under surface of the wings.

The beak is slender, and very slightly curved, three-quarters of an inch in length, and greenish-black; from the point to the gape it measures one inch, and from the gape to the occiput is also one inch: the irides hazel; the feathers on the top of the head dark brown, approaching to black, each feather edged with very light brown, giving a mottled appearance; the back of the neck light brown, the dark spots formed by the centre of each feather minute; the back very dark brown, the extreme edges only of the feathers light brown; the wing-coverts brown; the primaries nearly black, tipped with white; the shafts white; the tertials brown, edged with light brown; upper tail-coverts brown, with lighter-coloured borders; the tail cuneiform, the centre feathers black, the shafts and edges lighter; the feathers on each side light brown, enclosed by a zone of black, and edged with white; the chin, sides of the neck, throat, and breast, light brown, tinged with buff; abdomen, flanks, and under tail-coverts, white, but pervaded also with the buff-colour of the higher parts; the sides of the neck spotted, from the dark centres of the feathers occupying a larger surface than upon the front; axillary plume pure white; under surface of the broad web of the primaries beautifully mottled with dark specks; under surface of the secondaries ending in sabre-shaped points, presenting a series of lines formed by alternating shades of white, black, and dusky bands, which in the adult bird are well defined, and present a beautifully-variegated appearance, peculiar to this species.

The legs are bare for half an inch above the joint; the tarsus measures one inch and a quarter; legs and toes clay-yellow, the claws black. The whole length of the bird is about eight inches. From the carpal joint to the end of the first quill-feather, which is the longest, five inches and a quarter. The female is a trifle smaller than the male.

In the young bird of the year the back and rump are somewhat darker than in the adult, and the under parts are whiter.

LIMICOLÆ. *SCOLOPACIDÆ.*



BARTRAMIA LONGICAUDA (Bechstein*).

BARTRAM'S SANDPIPER.

Totanus Bartramii.

BARTRAMIA, *Lesson*†.—Bill scarcely longer than the head, moderately slender, straight, the nasal groove extending nearly to the tip, which is narrowed but obtuse ; nostrils linear, basal. Wings not reaching to the end of the tail, pointed, the first quill-feather the longest, the inner secondaries rather elongated. Tail of twelve feathers, rather long, much rounded. Legs rather long and slender, the tibia bare for a considerable distance ; tarsus scutellate ; toes three in front, long and slender ; a slight web between the outer and the middle ones ; hind toe elevated.

THE earliest recorded occurrence of this American species in Great Britain was that of a bird shot near Warwick,

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[*] *Tringa longicauda*, Bechstein, Kurze Uebersicht aller bekannten Vögel, p. 453 (1811).

[†] Traité d'Ornithologie, p. 553 (1831). It is clear that the generic name *Bartramia* has precedence of *Actiturus* of Bonaparte, as that author quotes it (Sagg. Distrib. met. Animali Verteb. p. 143, 1831).

sitting on a bean-stubble, by Mr. R. Barnard, and sent to the late Hugh Reid of Doncaster for preservation on the 31st October, 1851 (Zool. pp. 3330, 3388, 4254). It afterwards passed into the collection of Lord Willoughby de Broke, at Compton Verney, near Stratford-on-Avon. The next specimen, which is now in the collection of Mr. J. H. Gurney, was shot on the 12th December, 1855, in a ploughed field between Cambridge and Newmarket, and an illustration of the bird, with the following details of its capture from the pen of the Rev. Frederick Tearle, of Trinity Hall, Cambridge, appeared in 'The Illustrated News' of 20th January, 1855:—"Some farm labourers, who were engaged in thrashing near the spot, observed a strange bird flying round in large circles over the adjoining field, and uttering a whistling cry at short intervals. It frequently alighted, and ran along the ground like a Corncrake. One of the men thought he could catch it with his hat, and gave chase; but the bird, as soon as he came near, rose, and flew around, whistling as before. On seeing that it did not fly away, the son of a gamekeeper, who lived close by, went into his father's cottage for a gun, and came out and shot it. He sent it to me a few days afterwards, calling it a Whistling Plover." Another correspondent of the same newspaper, under the initials N. S. R., stated that he had shot a bird of this species on the 19th of January, 1855, at Bigswear, in Gloucestershire, but the assertion must be taken for what it is worth. The third authenticated example was shot near Mullion in Cornwall, from a piece of pasture-turnips, and brought into a game-shop on the 13th November, 1865, when Dr. Bullmore obtained and recorded it.* A fourth, and perhaps the earliest British-killed specimen, appears to have been unrecorded until recently (Zool. 1877, p. 389), although shot at least thirty years previously on the banks of the Parret in Somersetshire: it forms part of the collection of Dr. Woodforde of Taunton.

A fifth, recorded by Mr. George Bolam, who acquired it, was shot by Mr. James Gray on the sea-banks at Lowhoughton Low Stead, in Northumberland, on the 21st November, 1879. Mr. Bolam writes:—"It had been in the neighbourhood for about a week before it was killed, and was in the habit of frequenting the long grass or 'bents,' with which the links at Low Stead are covered. Mr. Henry Grey, who had a very good opportunity of observing it while alive, and who spent a considerable time in watching its habits, informs me that it was not at all shy, and when amongst the tall grass lay like a Snipe or Woodcock, allowing him to approach within a few yards of it before rising, and when flushed, after flying for a short distance (seldom more than a hundred yards at a time), it would again drop into the long grass, or alighting on the bare sand would run off to some convenient place of shelter. When surprised in the open, without any covert at hand amongst which to hide, it ran very swiftly, frequently stopping behind a stone, or, after it had got some distance away from him, standing on a slight hillock or other eminence and watching his movements, its tail all the while moving up and down with a peculiar swaying sort of motion, not observable in any of the other Sandpipers. Its note, uttered for the most part when flying, was a shrill piping whistle. Very unfortunately, it had not recovered from the autumnal moult, many of the feathers being only partly grown, while others are entirely wanting. On dissection it proved to be a female, and the day after it had been shot, when it came into my possession, weighed 5¼ oz., but as it was badly wounded and had bled a good deal, it must, when newly dead, have been considerably heavier."* Respecting a sixth example, Mr. J. E. Harting writes (Zool. 1880, p. 508), that on the 27th October, the late Mr. Cooper, the taxidermist of Radnor Street, St. Luke's, brought for his inspection a freshly-killed specimen which had been purchased in Leadenhall Market, hanging up with a lot of Plovers, said to have come with it from Lincolnshire. The stomach contained numerous fragments of wing-cases of small beetles, which were submitted to Mr. E. C. Rye, who could find nothing to make him believe that the bits were other than the remains of British insects. And lastly, Mr. Harting has shown to the Editor a letter from Mr. T. Cornish, announcing the capture of another at St. Keverne, near the Lizard, Cornwall, last October (1883).* Of other so-called specimens on record several have proved to be examples of the Ruff.

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* 'Zoologist,' 1866, p. 37, and 'Cornish Fauna,' p. 31; see also Rodd's 'B. of Cornwall,' pp. 96–100, for an elaborate description.

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* 'The Field,' 20th Dec. 1879; and Pr. Berwick Nat. Club, 1880, p. 167.

There are several records of the visits of Bartram's Sandpiper to other parts of Europe, but the correctness of some of them is open to question. Amongst these, one in Sweden, of which, according to Professor Meves, there is no evidence; one in Holland; and one, according to Naumann, in Hesse. The genuine occurrences are, the one obtained by Mr. C. A. Wright at Malta, on the 17th November, 1865 (Ibis, 1869, p. 247); and the one recorded by Dr. Salvadori, killed in Liguria in 1859, now in the collection at the Museo Civico of Genoa. As a straggler it appears to have occurred in Australia, for Gould states that he has examined a specimen shot near Botany Bay.

In America, Richardson observed it on the plains of the Saskatchewan in May, 1827, and it is well known in Canada and Nova Scotia. It appears to be generally distributed during the summer over the northern and central portions of the United States to Illinois and Pennsylvania, where it is known as the 'Upland Plover' or 'Field Plover.' It is especially abundant on the great plains on the eastern side of the Rocky Mountains, where it is called the 'Prairie Pigeon'; but as yet it is not known to cross that natural barrier, although it has been found so near as the Big Blue River, Utah; and in the north-west it was obtained by Mr. Dall on the Yukon river, Alaska. On migration it occurs in considerable numbers both in autumn and spring, and at the latter season Dr. Elliott Coues says that vast flocks pass through Kansas, Nebraska, Iowa, Minnesota, and Dakota, where many remain to breed, while others continue their course northwards; the autumn passage southwards commencing in August. Mr. Dresser found it abundant in Texas; and its migrations extend to Mexico, the West Indies and Bermuda, Central America, Colombia, Brazil, Eastern Peru, and Chili.

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* The contemporaneous capture of a Pectoral Sandpiper (*Tringa maculata*) in the Scilly Islands was announced in the same letter; but too late for insertion in the chapter on that species.

Dr. E. Coues says that the nest is a slight depression in the ground with a leaf or two, or a few blades of grass; and the eggs, which are ordinarily four in number, are laid early in June. Their shape is less pointedly pyriform than that of some species; the ground is pale clay-colour with underlying purplish-grey shell-markings, with numerous surface dots of umber-brown; the average measurements are 1·75 by 1·28 in.

The young, which are generally hatched before the end of June, are somewhat helpless and clumsy, with a top-heavy appearance and disproportionately long legs, until they gain their feathers. The note is a soft mellow whistle, whence its local name of 'Papabote'; but when its nesting-places are invaded, this bird utters a harsh and often-repeated scream. Although eminently terrestrial, it not unfrequently alights on fences, posts, limbs of trees, and in certain districts telegraph poles are favourite stands. Its food in summer seems to consist principally of grasshoppers, and at other times is mainly insects, especially beetles, as well as berries. The stomach of the one shot in Cornwall contained remains of the common black beetle, four or five small earth-worms, and a little slimy green herbage; the bird was loaded with fat, and weighed 6 oz. 2 drs.; in fact, this species is almost always fat, and in autumn it is delicious eating.

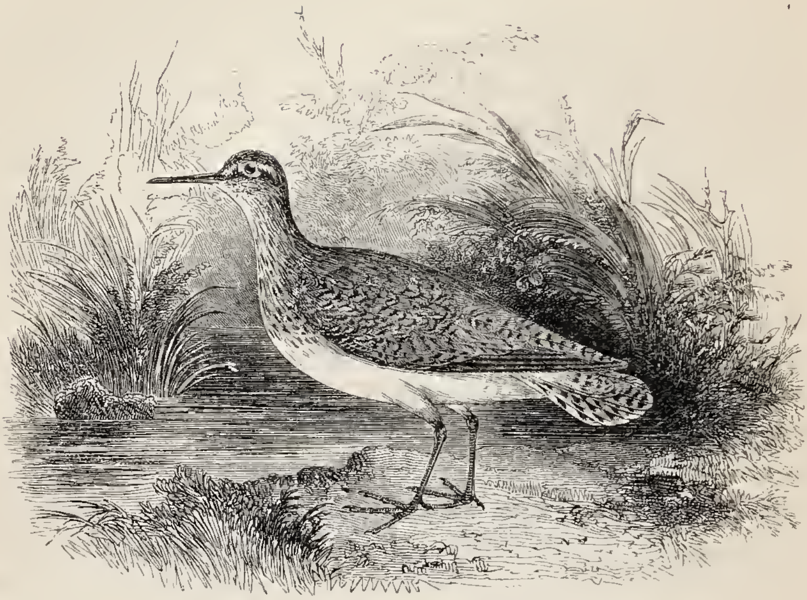
In the adult in summer the bill is blackish towards the tip, yellowish at the base; irides dusky; the forehead, over the eye, neck, and breast, pale rufous marked with small streaks of black, which on the lower part of the breast assume the form of arrow-heads; chin, orbit of the eye, belly, and vent, white; hind head and neck rufous, minutely streaked with black; back and scapulars black, the former edged with reddish-brown, the latter with white, the tertials black, edged with white; primaries blackish-brown, the shaft of the outer quill whitish, the inner vane pectinated with white; secondaries pale brown, spotted on the outer vanes with black and tipped with white; under surface of wings beautifully streaked and barred with silver-grey and white; greater coverts dusky, edged with warm buff and spotted with black; lesser coverts pale brown, each feather broadly edged with white, within which is a concentric semicircle of black; rump and tail-coverts deep brownish-black, slightly bordered with white; tail wedge-shaped when closed, tapering, of a pale brown-orange colour, beautifully spotted with black, the middle feathers centred with dusky; legs yellow, tinged with green; under surface of the wings elegantly barred with black and white. The figure was taken, by permission, from Gould's 'Birds of Europe.'

The length is twelve inches. Bill one inch and a half. The wing, from its anterior bend to the end of the longest quill-feather, measures six inches seven lines; the tarsus two inches; naked part above one inch; middle toe one inch. The female is on the average rather larger than the male.

The adult in winter is rather paler; and immature birds have the feathers of the back more margined with rufous buff. The young in down are entirely white below, finely mottled with black, white, and rich brown above; the feet and under mandible light-coloured; the upper mandible black.

Mr. Harting, who carefully dissected the Lincolnshire specimen, remarks that the sternum, in point of size, approximates to that of *Totanus fuscus*, and has the posterior margin doubly cleft as in that species and its congeners; the apex of the keel is, however, not pointed as in the above, but rounded as in *Numenius* (Zool. 1880, p. 509). It will be observed that the tail is barred, as in *Totanus*, and not plain, as in *Tringa*.

LIMICOLÆ. *SCOLOPACIDÆ.*



TOTANUS HYPOLEUCUS (Linnæus*).

THE COMMON SANDPIPER,

OR SUMMER SNIPE.

Totanus hypoleucos.

TOTANUS, *Bechstein*†.—Beak longer than the head, straight, or very slightly re-curved, soft at the base, hard, solid, and cutting at the point, compressed throughout the whole length, ending in a sharp point; both mandibles grooved at the base; the extreme end of the upper mandible slightly bent towards the under one. Nostrils lateral, linear, pierced longitudinally in a groove. Legs moderate or long, slender, naked above the tarsal joint; three toes in front, one behind; the middle toe united to the outer toe by a membrane. Wings moderate; the first quill-feather the longest; inner secondaries elongated. Tail rather short: somewhat rounded.

THE COMMON SANDPIPER is a summer visitor to the British Islands, usually appearing in April, and leaving again by the end of September, although some remain till November.

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* *Tringa Hypoleucos*, Linnæus, Syst. Nat. Ed. 12, i. p 250 (1766).

† Ornithologisches Taschenbuch, ii. p. 284 (1803).

It is very generally known by the name of the Summer Snipe.*

As a rule this species will be found during the breeding-season by the gravelly margins of rivers, brooks, lakes, or ponds, and it is partial to islets of shingle with scanty herbage, in the middle of trout-streams. Localities of this description are uncommon in the south and south-east of England, and there the Common Sandpiper is chiefly seen on migration. It breeds sparingly on the moorland streams of Cornwall, Devon, Somerset, and perhaps in Dorsetshire, occasionally in Sussex, and it is believed to have nested in Kent and in Buckinghamshire. Along the east coast, from Essex to Lincolnshire inclusive, it is only a visitor on migration, and has not been known to breed; but in Yorkshire the country is suitable to its habits, and it nests in many localities. It also rears its brood in various parts of Wales: in fact, west of the Severn and north of the Trent, this Sandpiper is a well-known summer resident. Across the Scottish border it becomes numerous, and it is to be found on almost every loch and burn throughout the mainland, penetrating to the Outer Hebrides, the Orkneys, and to the Shetland Islands, where Saxby found it breeding. Mr. Harvie-Brown has observed a pair on Ben Chaorin, evidently nesting, at the elevation of 2,700 feet; but in these islands the species generally selects lower situations, and Mr. R. Gray states (B. W. Scot. p. 297), that on the banks of the Clyde he has even seen it occasionally making its nest in flower-pots, under bushes, and among growing plants, frequently in turnip-fields, when previous experience had taught the birds that the neighbouring banks of shingle were liable to be flooded. In Ireland it is generally distributed in summer, although rather less numerous than in Scotland.

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* Owing mainly to the shorter bill and feet as compared with those of allied species, this and the Spotted Sandpiper have been taken out of *Totanus* and placed in the genus *Tringoïdes*, Bp. The osteological peculiarities of the Green Sandpiper have led to the erection of the genus *Helodromas*, Kaup; whilst the Wood Sandpiper, which so closely resembles it externally, has been placed in the genus *Rhyacophilus*, Kaup. In the present work it seems expedient to keep them all in the genus *Totanus*.

On the Continent of Europe the Common Sandpiper occurs in summer, in suitable situations, from the snow-line of the north down to the Pyrenees, the Alps, the Carpathians, and the mountainous parts of Greece and Turkey. South of this, only a comparatively small number are to be found breeding, as, for instance, in Madeira, the Canaries, Spain, and the islands of the Mediterranean, but it is known nearly everywhere as a migrant. It ascends the Nile as far as Abyssinia, and is supposed to breed in some of the elevated districts of Africa; its course being traceable along the entire coast-line of that Continent, as well as to Madagascar, Mauritius, and the Seychelles. In Asia it is found from the Arctic circle southwards, crossing the great divide at an elevation of 17,000 feet, and even breeding in the Himalayas, and perhaps in the highlands of Ceylon. In the rest of India, the Malay Archipelago, and other islands down to Australia and Tasmania, it is a visitor from autumn to spring; it is, in fact, distributed over the whole of the Old World. But although it extends its Asiatic range to the shores of Kamtchatka, it does not cross over to the west coast of America; nor is it found in the eastern portion of that Continent, being replaced there by the Spotted Sandpiper, *T. macularius*.

The habits of this Sandpiper are interesting, its actions are lively, and it is mostly seen while running nimbly along the gravelly margins of streams or fresh-water lakes, but seldom on the sea-shore. When on the ground it is in constant motion, flirting the tail up and down, and almost as frequently stretching out, and again withdrawing, the head and neck. When disturbed and flushed, this bird utters a piping note on taking wing, which has been compared by Colonel Sykes to the sounds, *wheet, wheet, wheet;* and Mr. Selby says that, from the resemblance to its well-known note, one of the provincial names of this species is Willy Wicket. It frequently alights on fences, and Von Heuglin noticed it in Africa perching on the rigging of ships, and on bushes overhanging streams. Its food is worms and insects.

The Common Sandpiper makes a slight nest of moss and dry leaves in a hole on a bank near fresh water, generally under shelter of a bunch of rushes or a tuft of grass, and sometimes in a corn-field, if it happens to extend near enough towards the water. Colonel Legge describes a nest which he found in Wales, constructed of dead pieces of the common rush, the bottom being of the exceptional thickness of three inches. The eggs are four, reddish-white in colour, spotted and speckled with umber-brown, measuring 1·45 by 1 in. "If disturbed during the period of incubation," Mr. Selby observes, "the female quits the nest as quietly as possible, and usually flies to a distance, making at this time no outcry; as soon, however, as the young are hatched, her manners completely alter, and the greatest agitation is expressed on the apprehension of danger, and every stratagem is tried, such as feigning lameness, and inability of flight, to divert the attention of the intruder from the unfledged brood." A writer in the vicinity of Clitheroe, in Lancashire, says (Mag. Nat. Hist. vi. p. 148), "The Common Sandpiper breeds with us; and I this year started an old one from her nest, at the root of a fir-tree. She screamed out, and rolled about in such a manner, and seemed so completely disabled, that, although perfectly aware that her intention was to allure me from her nest, I could not resist my inclination to pursue her, and, in consequence, I had great difficulty in finding the nest again. It was built of a few dried leaves of the Weymouth pine, and contained three young ones, just hatched, and an egg, through the shell of which the bill of the young chick was just making its way; yet, young as they were, on my taking out the egg to examine it, the little things, which could not have been out of their shells more than an hour or two, set off out of the nest with as much celerity as if they had been running about for a fortnight. As I thought the old one would abandon the egg if the young ones left the nest, I caught them again, and covering them up with my hand for some time, they settled down again. Next day all four had disappeared." The adult Sandpiper can swim and dive well, however inapplicable to such a purpose the feet of this little bird may appear to be; and Mr. Selby mentions that the young, too, when three weeks or a month old, just before they are able to fly, if discovered and attempted to be caught, boldly take to the water, diving repeatedly, and to a considerable distance. Messrs. Sheppard and Whitear, the authors of the 'Catalogue of the Norfolk and Suffolk Birds,' say, "Some years since we saw a Sandpiper flying across a river attacked by a Hawk, when it instantly dived, and remained under water until its enemy disappeared. It then emerged and joined its companions. This bird, when flushed, sometimes utters a note resembling, as near as possible, that of the Kingfisher." Montagu says, "Having shot at and winged one of this species, as it was flying across a piece of water, it fell, and floated towards the verge, and as we reached to take it up, the bird instantly dived, and we never saw it rise again to the surface."

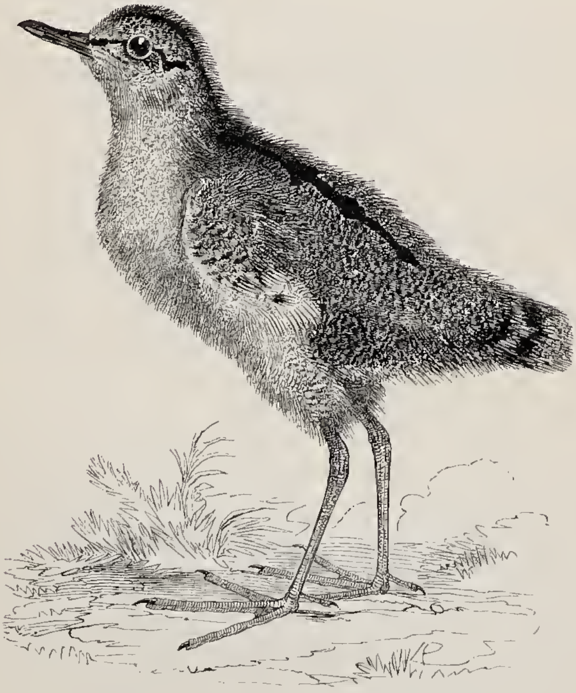
The beak of the Common Sandpiper is dark brown towards the point, pale yellow-brown at the base; the irides dusky-brown; from the beak to the eye a brown streak, over that, over the eye, and over the dark-coloured ear-coverts, a light-coloured streak; the top of the head, back of the neck, the whole of the wing-coverts, the back, upper tail-coverts, and the four central tail-feathers, greenish-brown, with a dusky greenish-black stripe across the centre, and along the line of the shaft of each feather; wing-primaries almost black, with a greyish-white patch on the inner web of all but the first; the secondaries tipped with white; the tail graduated, the central feathers being the longest, and all twelve barred with greenish-black; the four outer tail-feathers on each side tipped with white; the two outer tail-feathers on each side with the outer webs white, barred with greenish-black; the chin white; the sides of the neck and the upper part of the breast streaked with dusky-black, on a ground-colour of pale ash; the lower part of the breast and all the other parts of the under surface of the body of a delicate and uniformly unspotted white (hence the systematic specific name of the bird); the legs and toes ash-green; the claws brown.

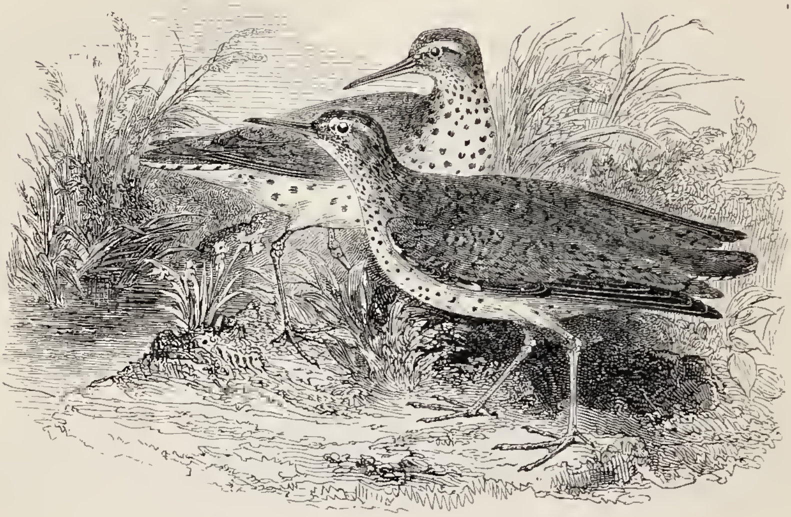
The whole length of the bird is seven inches and a half. From the carpal joint to the end of the wing four inches and a quarter; the first quill-feather the longest.

Young birds of the year have the front of the neck white, with dark streaks on the sides only; the white streak over the eyes more conspicuous; the wing-coverts darker in colour; the feathers on the back edged with reddish-buff, spotted with black.

The chick, soon after leaving the egg, has all the upper surface of the body covered with down of an ash-brown colour, with a black streak through the eye; a black stripe on the head, nape, and down the back; the under surface of the body greyish-white; the legs pale green.

For the means of figuring the young bird in this state, the Author was indebted to the late Mr. T. C. Heysham, of Carlisle.





Totanus macularius (Linnæus*).

THE SPOTTED SANDPIPER.

Totanus macularius.

The Spotted Sandpiper is an American bird, which was originally included in the British List through an error on the part of Edwards, who described by this name (Gleanings in Nat. Hist. vi. p. 141) a specimen of the Common Sandpiper obtained in Essex, figuring at the same time a genuine example of the Spotted Sandpiper from America. Bewick's bird is certainly our Old World species, and so are a considerable proportion of the specimens since recorded from time to time as Spotted Sandpipers, a long list of which is given by Mr. Harting in his valuable 'Handbook of British Birds' (p. 139). Ignorance and self-deception on the part of the owners, are responsible for several of these, but some of the others labour under the imputation of being genuine examples of the American species, sold to their possessors as

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[*] *Tringa macularia*, Linnæus, Syst. Nat. Ed. 12, i. p. 249 (1766).

British-killed specimens. Mr. J. H. Gurney, jun., has taken a great deal of trouble in the investigation of the authenticity, in both senses, of the examples recorded (Rambles of a Naturalist, pp. 255–262), and he has unquestionably disposed of the claims of the majority. The details, too often unpleasant, are well worthy of perusal; but for the purposes of the present work it will suffice to say, without impugning any particular record, that the following occurrences appear sufficiently established to entitle the Spotted Sandpiper to retain its place in the list of stragglers to the British Islands.*

A couple, one of which is now in Mr. Gurney's possession, were said to have been shot at the Crumble pond, near Eastbourne, in the beginning of October, 1866, and their antecedents bore investigation. In August, 1867, as recorded by Mr. R. Gray (B. of W. of Scot. p. 299), two Spotted Sandpipers, male and female, presumably shot in the vicinity, were left *in the flesh* at the Museum of Aberdeen, as proved by Mr. Angus, and the stomachs of the birds were sent to Mr. Gray for dissection. The antecedents of other examples, said to have been killed in these islands, is less satisfactory.†

It has been stated by Nilsson, Temminck, Naumann, and other authorities, that the Spotted Sandpiper is a visitor to the Continent of Europe, but the Editor is unable to find any convincing evidence of the correct identification of the specimens said to have been obtained. MM. Vian and Marmottan (Bull. Soc. Zool. Fr. 1879, p. 248), among the list of rarities obtained exclusively in *France*, cite an adult male *T. macularius* killed on the 22nd April, 1875, at "Spire, Bavière rhènane" (!); and Mr. Gätke informs the Editor that he believes in the authenticity of one shot on Heligoland in May, 1840, and sent to Hamburg before he collected.

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* The following narrative by Mr. C. M. Adamson ('Some More Scraps about Birds,' p. 263) may be read with advantage by collectors of British-killed specimens:—"A friend one day mentioned to me that a man had sent him skins of the Spotted Sandpiper from his neighbourhood, and he asked me what I thought of them. I at once said *American*. This man, my friend told me, said they came every summer. I told my friend I would give five pounds a piece for them recently killed, if obtainable. Then he seemed inclined to go over himself, but did not. However, some little time afterwards he asked me to come and see a Spotted Sandpiper, with the body in it, which had been sent him. The sender wrote stating he had shot the bird, which had fallen, and he could not find it; but on going several days after he had found it, but it was useless, as the weather was hot, it being in summer. The bird had full-sized maggots in it, but instead of being tender and coming to pieces, it was as tough as leather, and the feathers all firm in the hard skin, and it had not the smell of a recently-killed putrid bird. I again said unquestionably American—that is, it was an old dried bird with the flesh in which had been wetted, and either flies had blown in it, or, more likely, the maggots had been purposely put on the softened flesh. The following year the man said the Act of Parliament prevented him getting any more Spotted Sandpipers, but I should think he had enough of them."

† *Cf.* Dalgleish, Bull. Nutt. Orn. Club, 1880, pp. 147–149.

The Spotted Sandpiper has a very extensive range in North America, breeding from Labrador to Texas, and from the shores of the Atlantic to the mouth of the Yukon. It is found up to an elevation of 8,000 to 9,000 feet, and even to the shores of the lakes near the end of the forest-growth. In October it leaves the Northern States and passes southwards for the winter, visiting the Bermudas, the West Indies, and Central and South America as far as Brazil. The return migration takes place in April, but, as observed by Audubon, there is considerable difference between the time of breeding in southern localities such as Texas, and northern ones like Labrador. During the breeding-season it inhabits the banks of rivers and lakes, where its actions, habits, and food are observed to accord so closely with those of our Common Sandpiper in this country as to make quotation from American authorities unnecessary. One extract from Audubon's Ornithological Biography may be given, because it refers to a power possessed by birds which has been doubted—that of being able to move their eggs when danger threatens. "My esteemed friend, Thomas Macculloch, of Pictou, Nova Scotia, having transmitted to me a curious account of the attachment of one of these birds to her eggs, I here insert it with pleasure:—'Being on an excursion to the Hardwood Heights, which rise to the west of Pictou, my attention was attracted by the warble of a little bird, which appeared to me entirely new, and which proceeded from a small thicket a short way off. Whilst crossing an intervening meadow, I accidentally raised a Spotted Sandpiper from its nest, and having marked the spot, I hastened forwards; but the shyness of the object of my pursuit rendered all my efforts unavailing, and returning to the nest I had just left I expected to find it still unoccupied; but the Sandpiper had again resumed her place, and left it with great reluctance on my near approach. The nest contained four eggs, which I determined to remove on my return at night, and for the purpose of preventing the bird sitting again upon them I placed a number of stones in a slanting position over the nest, and so close that it was impossible for the bird to get into it. On my return in the evening, however, I observed the little creature rise from beside the stones, apparently in greater trepidation than ever, and more anxious to draw me away by the exhibition of all those little arts which they practise for this purpose. On examining the spot I was very much surprised to find that the poor thing had not only hollowed out a new nest, but had actually succeeded in abstracting two eggs from the other nest. How the bird had contrived to remove the eggs I cannot conceive, as the stones remained unaltered. This attachment to its nest and eggs appeared to me more singular as the bird had but just commenced incubation, the eggs exhibiting very little appearance of the young.'"

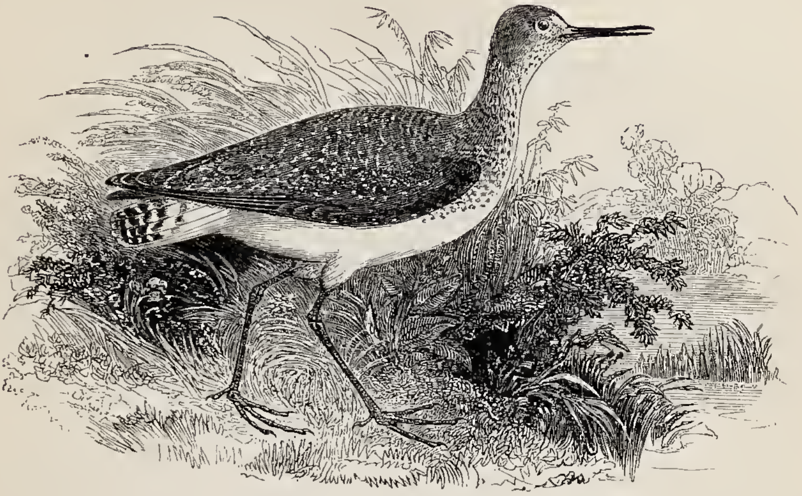
Two eggs of the Spotted Sandpiper, given to the Author by Mr. Audubon, resembled those of our Common Sandpiper, measuring about 1·4 by 1 in.; of a pale reddish-white, spotted and speckled with ash-grey, and two shades of reddish-brown; but, as a rule, the spots are darker than in eggs of our bird.

This bird is smaller than our Common Sandpiper, but so like it in the general colour and markings of the plumage on the upper surface of the body, that the distinctions only need be noticed. The beak is shorter and paler in colour, both at the point and at the base; the dark streak on the feathers of the back seems more confined to the transverse direction, and is not so often conspicuous down the line of the shaft of the feather; the secondaries are tipped with white, as in the Common Sandpiper, but the feathers are longer; in the tail five feathers on each side have white tips, and only one feather on each outside of the tail has the outer web white, barred with greenish-black; the chin white; the throat, neck, breast, and all the under parts, even to the ends of the under tail-coverts, white, but ornamented with numerous well-defined round spots of dusky greenish-brown; the legs and toes flesh-colour; the claws brown.

The whole length is about six inches and three-quarters. From the carpal joint to the end of the wing, four inches; the first quill-feather the longest in the wing.

The birds of the year are far less spotted on the under parts than the adults, which increases the resemblance between this species and the Common Sandpiper.

The young chicks on leaving the shell are covered with down of a dull drab-colour, marked with a single streak of black down the middle of the back, and with another behind the ear.



Totanus ochropus (Linnæus*).

THE GREEN SANDPIPER.

Totanus ochropus.

The erratic habits of the Green Sandpiper have given rise to endless discussion and surmise. As a bird of double passage it is not unfrequent in many parts of the country, sometimes occurring even in winter, when deep snow is on the ground, and as a rule it is absent from our streams for only the brief interval between the beginning of June and the end of July—barely a couple of months. Single birds, pairs, and small parties, have however been observed here during those summer months, and Mr. Stevenson has shown by a tabulated statement that Green Sandpipers have been obtained in Norfolk in every month of the year.

In a letter received on the 15th of September, 1840, the late Rev. Richard Lubbock said :—" This year I requested my nephew, who is often about the rivulet looking for fish, to let me know as soon as he perceived their return. On the 23rd of July he told me that he had seen six together, and on the 26th of the same month I found them near the place he had mentioned. By creeping on my hands and knees I obtained a good view of them as they walked about on a mud bank, and believe from the duller look of the plumage of some, that they were two old birds with a brood of young ones. They appear to separate soon after their arrival, or to unite for a day or two as fancy leads them."

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* *Tringa Ocrophus* (misprint), Linnæus, Syst. Nat. Ed. 12, i. p. 250 (1766).

It has naturally been supposed that this Sandpiper breeds occasionally in the British Islands, and since the fact has been placed beyond question that this species habitually deposits its eggs in old nests in trees, many points in the habits of the birds observed in summer have a peculiar significance. Thus, so long ago as June, 1843, Mr. Knox observed, as recorded in his delightful 'Ornithological Rambles in Sussex' (p. 227), that four birds, one of which was afterwards shot for identification, when disturbed from the borders of a pond through which ran a clear trout stream at Cocking, near Midhurst, always retired to the great woods in the immediate neighbourhood. There are many similar records from various parts of England, and in a footnote in Mr. Stevenson's 'Birds of Norfolk,' ii. p. 226, Mr. J. H. Gurney, jun., communicates the following:—"Mr. Alfred Roberts, of the Museum at Scarborough, has had the Green Sandpiper (*T. ochropus*) several times from the neighbourhood of Hunmanby, in all cases shot in June. The keeper there says they breed in old crows' nests; he has seen them come off from the nests." This statement is explicit, and only requires confirmation; nevertheless, Mr. W. E. Clarke says (Hbk. Yorks. Vertebs. p. 77), that there is no reliable evidence of its having bred in Yorkshire; and the same must at present be said of the rest of England. To that country and to Wales the Green Sandpiper is a periodical visitant of general distribution on the banks of rivers and inland waters, although never numerous; and it occurs with tolerable frequency in the eastern counties of Scotland up to Aberdeenshire, although very rare in the west, and unknown in the island dependencies. In Ireland a few are obtained on their migrations along the eastern side nearly every year, but it must be considered a very rare bird on the rivers and estuaries of the west.

The breeding-range of this species in Europe reaches as far north as the vicinity of the Arctic circle, and extends throughout the greater part of Scandinavia; Northern and Central Russia, where it is the commonest of the Sandpipers; the islands and shores of the Baltic; and Northern Germany as far west as Holstein. Bogdanow states that it breeds in the Caucasus. In Holland, Belgium, and the rest of Central and Southern Europe, the Green Sandpiper has not as yet been proved to be other than a migrant, although suspected of breeding in several localities, and even in the extreme south its stay is unusually late: for instance, a fully adult female in the Editor's collection was obtained near Malaga on the 24th of June. Its residence is similarly prolonged in the islands and along the eastern shores of the Mediterranean; and it is a common species in suitable localities, from autumn to spring, in Northern Africa from Morocco to Egypt. On the western side of that continent it has not been traced at present beyond Angola; but in the eastern portion it is found up the Nile to Abyssinia, and, through the great Lake district, to Cape Colony. Passing to Asia, its summer range is found to extend, as in Europe, to the Arctic circle, and eastward as far as the Stanowoi Mountains and the Sea of Okhotsk; in Japan, Mongolia, and China the bird is only a migrant; but it is said by Dr. Severtzoff to breed in Turkestan and in the Pamir. To Asia Minor, Persia, Baluchistan, and India it is a regular visitor, arriving in the latter as early as July, and it occurs in small numbers in Ceylon, Burmah, and Tenasserim, beyond which it has not at present been recorded; its range is, therefore, less extensive than that of some of its congeners.*

The remarkable deviation of the Green Sandpiper from the ordinary nesting-habits of other waders, was brought before the notice of British readers by Professor Newton, who published an interesting account of the novel facts in the Proceedings of the Zoological Society for 1863 (pp. 529–532). It appears that the first published intimation of the selection of trees as breeding-places was given in 'Naumannia' for 1851 and 1852; and soon afterwards Herr Wiese narrated in the 'Journal für Ornithologie,' 1855, p. 514, how, having been told of this by an old sportsman, he took a clutch of four eggs himself from a simple bed of moss high up in the fork of a pine-tree in the district of Cöslin, Pomerania, where he afterwards found others. Subsequently, Forester Hinz communicated (J. f. O. 1862, p. 460) ample details respecting the nidification of this species as observed by him in Pomerania since the year 1818. The eggs, which have been found as early as the 16th of April, were frequently placed on old nests of the Song-Thrush, Jay, Blackbird, Missel-Thrush, Wood Pigeon; once on that of the Red-backed Shrike; often in squirrels' dreys; sometimes on the ground; on the moss on old stumps with only a few leaves under the eggs; in broken-down trees where Starlings and Pied Flycatchers had previously nested; on the branches of an old pine-tree where the spines were heaped together; at elevations varying from 3 to 35 feet; but always in proximity to ponds. From one of the loftiest nests the young jumped down without injury, and immediately hid themselves in the grass. Mr. Seebohm found an old nest which contained one egg of this Sandpiper, about six feet from the ground, in a willow-tree at Egarka on the Yenesei, on the 6th July. The eggs are of a pale greyish-green, with small purplish-brown spots and markings, thicker towards the larger end; they measure about 1·55 by 1·1 in. It is supposed that, as with other waders, two females occasionally lay in the same nest, as seven eggs are said to have been found in one; the usual number being four.

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* Mr. Harting has a skin of this species which was said to have formed part of a collection of American skins from Halifax, Nova Scotia, but there is no positive evidence of the occurrence of the Green Sandpiper in the Nearctic region. (*Cf.* Bull. Nutt. Orn. Club, 1878, p. 49.)

The Green Sandpiper is partial to woodland streams and ponds, and peaty swamps and meadow-drains, and it is seldom found in the vicinity of the sea. It is generally observed alone or in pairs or family parties, and is a shy and watchful species, frequently shifting its feeding-grounds for no assignable reason. The flight is rapid and glancing; and the note is a remarkable shrill whistling *tui-tui-tui.* Mr. Harting, who has given a long and excellent account of its habits (B. of Middlesex, pp. 173–177), says that it is more sluggish in its movements than the Common Sandpiper, feeding more slowly and systematically. It is not a surface feeder, but bores a good deal for its food, which consists chiefly of small beetles, spiders, very small red worms, woodlice, and small fresh-water snails, mingled with a little vegetable matter, and with less admixture of grit than is usual with other species of the genus. Of a bird wounded on the 2nd November, 1840, and kept alive, the late Mr. Doubleday wrote to the Author that it was not at all shy, and fed readily upon small worms, first dipping them in a pan of water; it ran about the room rapidly, constantly moving its tail up and down like a Wheatear. The flesh is described by the late Rev. R. Lubbock as having "a most fulsome muddy smell," although the bird is generally fat; and Mr. Cordeaux and Colonel Irby speak of its semi-aromatic and musky odour, but Mr. Gurney and others have not noticed this.

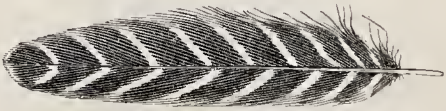
The beak is greenish-black; the irides hazel; from the beak to the eye a dusky-brown streak; over that and over the eye a white one; top of the head, back of the neck, back, wing-coverts, and tertials greenish-brown, with numerous small light-coloured spots; primary quill-feathers dusky-black; upper tail-coverts white; tail-feathers for the greater part white; the outside feather on each side with one small dark spot on the outer web near the end; the next feather with two dark spots; the third and fourth with two rather broad dark bands; the fifth and sixth with three or four dark bands, but all the marks are on the distal half of the tail-feathers, leaving the basal half pure white; chin white; throat, front, and sides of the neck, white, streaked downwards with dusky lines; breast and all the under surface of the body white; sides and axillary plume dusky, with narrow angular white bars; under wing-coverts dusky, with narrow transverse bars of white; legs, toes, and claws greenish-black.

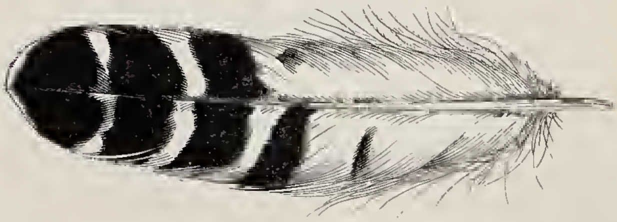
The whole length is nine inches and a half. From the carpal joint to the end of the wing five inches and five-eighths; the first quill-feather the longest in the wing.

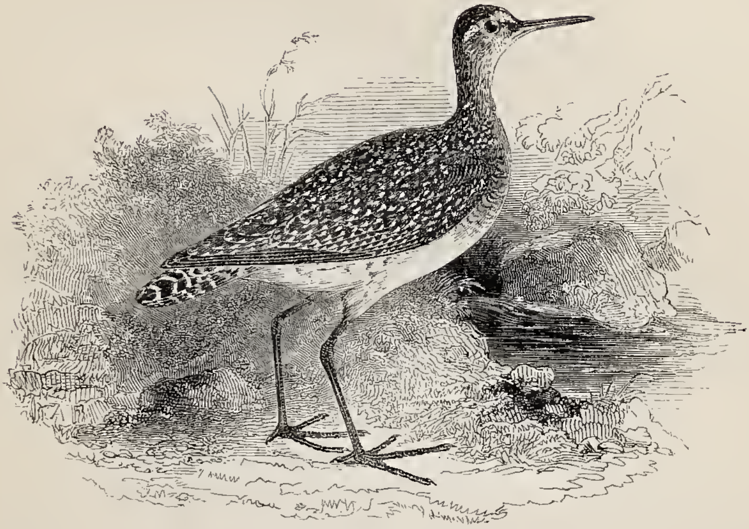
The young have rather more of the ash-colour in their plumage, and less of the dark green; the spots are fewer and less purely white.

In the nestling the down of the upper parts is a greyish-buff, very rufous on the back and rump, a black streak on each side runs from the base of the bill to the eye, beyond which it widens; a streak of black on each side of the crown and one through its centre unite in a broad nuchal patch; a broad black streak down the middle of the back; two similar ones on each side ending in a black tail-tuft; under parts greyish-white. By an unfortunate error the nestling of this species has been figured as that of the Wood Sandpiper in Mr. Gould's 'Birds of Great Britain.'

Of the two illustrations given below, the upper one represents an axillary plume, the lower one a middle tail-feather of the Green Sandpiper, to show the distinction between these feathers and those from the same parts in the Wood Sandpiper, as inserted at page 468.







Totanus glareola (Gmelin*).

THE WOOD SANDPIPER.

Totanus glareola.

The Wood Sandpiper was first described and figured as a British bird by Colonel Montagu, who clearly pointed out the specific differences between this species and the Green Sandpiper. These birds were considered by some early authors as merely varieties of the same species; but no doubt now remains that these two Sandpipers are perfectly distinct. The species now under consideration has the greater geographical range of the two, but the British Islands seem to lie to the westward of the migrations of the main body, and its occurrences are not nearly so frequent or so regular as those of its predecessor. It has not as yet been obtained in Ireland, for the statement by the late Mr. R. Ball, that it had been seen for several years, about the month of June, frequenting a stream in Glenbower Wood, near Youghal, is wholly unconfirmed, and probably refers to the Green Sandpiper. The most western locality for its occurrence in these islands is Cornwall, where, according to the late Mr. Rodd (B. of Cornwall, p. 94), it is a bird of double passage, having once been noticed as early as the 15th of April. On the 20th of May, 1840, a female was killed at the Land's End, in which were the rudiments of eggs. In June of the same year another was killed in the same locality; in the month of August of the same year a flock of seven were killed in the same parish, which proved to be birds of that year; and in 1837 one was obtained in the middle of December. In South Devon, however, it is of very rare occurrence, but in the northern portion, bordering on the Bristol Channel, it is more frequent, although rare again in Somersetshire and Dorset. It has been obtained from time to time along the rest of the southern coast of England, and in Essex and Suffolk. In the latter county Mr. Hele records an unusual number about Aldeburgh in 1867, and in the same year Mr. F. D. Power mentions a large party on the 26th July at Rainham in Kent. The species has also been observed in Surrey and other counties bordering the Thames, and in many localities at a considerable distance inland. In Norfolk, Mr. Stevenson thinks that it is decreasing in numbers, partly owing, perhaps, to the drainage of many sites on the opposite coast of Holland, where it breeds; and it may be observed that here as elsewhere the birds observed in autumn are almost invariably young birds, the adults being only noticed on the spring migration. It is even surmised that the Wood Sandpiper has bred in Norfolk, for a young bird, figured by Messrs. Gurney and Fisher (Zool. p. 1324), with down adhering, and not fully fledged, was shot with an adult female during the summer months by Mr. Scales, of bustard celebrity, and both are now in the collection of Mr. J. H. Gurney. In Lincolnshire, as Mr. Cordeaux informs the Editor, the examples of this rare visitor are invariably young ones, and they are always scattered singly along the sea-coast: never inland. In Yorkshire also it is rare, but a small flock alighted near Redcar in August, 1881. It is similarly a rare spring and autumn migrant to Durham and Northumberland, but in the latter county Mr. John Hancock detected it breeding in the now drained Prestwick Car, where, on the 3rd of June, 1853, the nest and eggs were taken after long and persevering watch, the adult male being shot at the same time. This is the only occasion on which the breeding of this species in England has been authenticated, but it appears probable that it has nested in the above locality in other years.

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* *Tringa Glareola,* Gmelin, Syst. Nat. i. p. 677 (1788).

In Scotland, according to Mr. R. Gray, the Wood Sandpiper has been obtained in Mid-Lothian, Aberdeenshire, and Caithness; and Mr. F. Bond has received well-authenticated eggs taken near Elgin; but on the west coast, one shot on the banks of the Clyde in the autumn of 1853, now in Mr. Gray's collection, is the only occurrence of which he is aware. As before stated, there is no satisfactory evidence that this species has ever visited Ireland.

The Wood Sandpiper has occurred in the Færoes, and it breeds in the interior of Norway, Sweden, Finland, Russia, Poland, Northern Germany, Denmark, and Holland, where the localities are suitable. Throughout the rest of Europe it is principally known as a bird of more or less regular passage; but the Editor shot an incubating female on the edge of a marsh near Aranjuez in Spain, on the 28th of May, 1870; and it probably breeds in Bohemia, and undoubtedly does so in Southern Russia. Its winter quarters commence at the Mediterranean and extend throughout Northern Africa down to Damara Land, the Cape, and Natal. Asia Minor, Persia, India, Ceylon, and Burmah are also visited by considerable numbers during the cold season, and it occurs more sparingly in the Philippines, and in the islands of the Eastern Archipelago. Dr. Severtzoff says that it breeds in Turkestan; and, to the north of the great Asian range, it appears to be found right across the continent to China, Japan, and the Kuril Islands, going as far north as Kamtschatka, and the Boganida in 70° N. lat., where Middendorff found it breeding.

Some particulars of the habits of this bird, as observed by the late Mr. Hoy, and communicated to Mr. Hewitson, are thus detailed in his work on the Eggs of British Birds:— "This species is migratory, making its appearance in April and retiring in September. That it breeds rather early I infer from having met with the young, feathered, and capable of flying a short distance, on the 11th of June. I regret that I did not discover the bird till late in the season.

"A great portion of Dutch Brabant, more particularly the southern and eastern parts, are covered by large tracts of heath; the soil of a light sandy nature. A great number of peat bogs and shallow pools of water are dispersed over this district. Most of the small streams are skirted by swampy ground, where the bog myrtle grows in the greatest luxuriance, with stunted bushes of alder and willow. These situations are the favourite haunt of this Sandpiper during the breeding-season. While the hen bird is sitting, the male flies round in wide circles, and at a considerable elevation. The female sits close; and the nest is extremely difficult to find.

"It is far from being numerous in the localities where I met with it; yet many pairs are dispersed over these districts, where they have long been known to breed, from information which I obtained from several intelligent sportsmen, to whom the bird was well known. Although I met with the young in a downy state, and partially feathered, I only obtained one nest with eggs. The nest is generally placed at a short distance from the water, among stunted heath, or scrubby plants of the bog myrtle, or among coarse grass and rushes. It is placed in a hollow, and is formed of dry grass and other plants. The eggs are four in number."

An egg of the Wood Sandpiper, given to the Author by the late Richard Dann, who obtained it in Norway, measured 1·6 by 1 in.; pointed in shape, of a pale greenish-white, spotted and speckled, particularly over the broad end, with dark reddish-brown.

The Wood Sandpiper has frequently been observed to perch on bushes, trees, and stakes; and in the pairing-season it indulges in 'play' after the manner of the Common Snipe, producing a similar tremulous sound. Its call-note is likened by Mr. Wolley to *leero, leero,* and by Meyer to *teatril, teatril ;* the alarm being *giff, giff.* The food of this species consists of worms, insects and their larvæ, and small mollusks ; and Mr. Collett has remarked a musky odour in those he shot, similar to that already mentioned as observed in the Green Sandpiper.

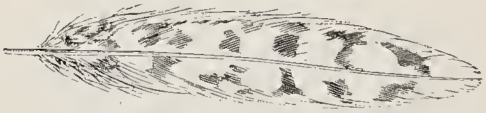
This bird is a little smaller than the Green Sandpiper, and has a proportionately shorter bill and longer tarsus ; the beak greenish-black, except at the base of the lower mandible, which is pale brown ; the irides dusky-brown ; from the base of the upper mandible to the eye a dusky patch ; over that and over the ear-coverts a white streak ; the top of the head, and back of the neck, wing-coverts, and tertials, greenish-brown, each feather margined with buffy-white spots, which are elongated and well-defined in the young, smaller and triangular in the adult; primaries uniform greenish-black, the shaft of the outer ones white, not dusky as in the Green Sandpiper; upper tail-coverts white, sometimes spotted with dark brown, especially in adult Siberian examples; outside tail-feathers white, barred with brown on both webs in the young: spotted rather than barred on the outer web only, in the adults; the remaining tail-feathers more distinctly barred, but the ground-colour of the two central ones becoming dusky towards the tip; chin white; sides of the neck, throat, and breast, streaked downwards with ash-brown lines on a ground of dull greyish-white; belly, vent, and under tail-coverts, white; sides, axillary plume, and under wing-coverts, white, with a few transverse dusky bars ; legs, toes, and claws, yellowish-olive.

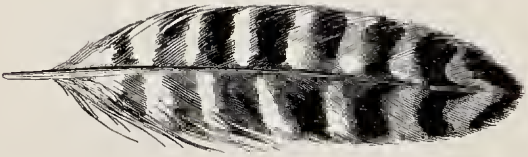
The whole length is not quite nine inches. From the carpal joint to the end of the first quill-feather, which is the longest in the wing, five inches.

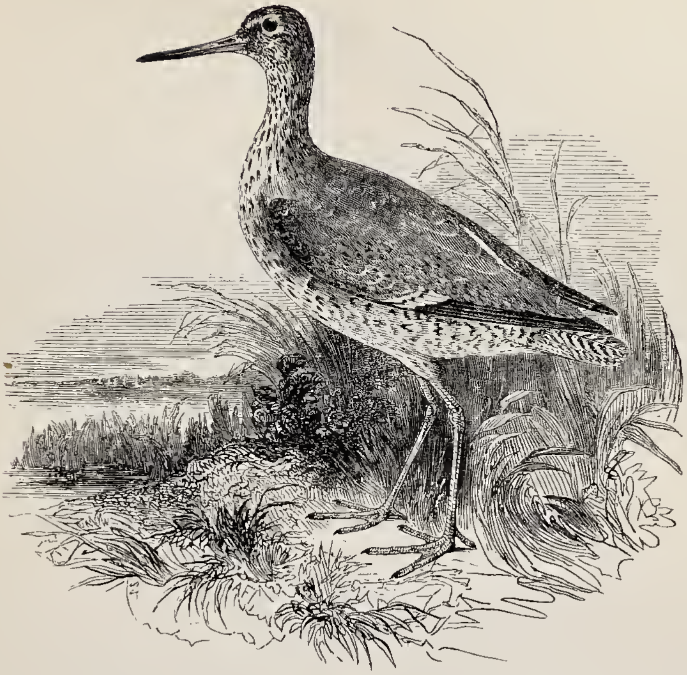
In the nestling the crown is covered with a dark brown cap, slightly paler in the centre; the dark streaks through each eye unite at the nape, but are separated from the crown-patch by a band of buff; the other markings of the upper parts resemble those in the Green Sandpiper, but the ground-colour is more buff; the under parts buffy-white.

A specimen of the American Solitary Sandpiper (*Totanus solitarius*) is said by Mr. R. Gray (Ibis, 1870, p. 292, and B. of W. of Scot. p. 296) to have been shot some years ago, somewhere on the banks of the Clyde. More recently Mr. T. Cornish has stated (Zool. 1882, p. 432) that an example was obtained at Scilly on the 21st September of that year, and is now in the collection of Mr. Dorien Smith of Tresco. In reply to inquiries, Mr. Cornish informed the Editor that this specimen was identified from the plate and description in Wilson's 'Ornithology,' and not from comparison with an American skin. This Nearctic representative of our Wood Sandpiper differs from the latter in having the upper tail-coverts of an olive-brown colour, the shaft of the outer primary is dusky, not white, and the outer tail-feathers distinctly barred on both webs.

Beneath are representations of a feather from the axillary plume and one from the middle of the tail in the Wood Sandpiper.







TOTANUS CALIDRIS (Linnæus*).

THE COMMON REDSHANK.

Totanus calidris.

THE COMMON REDSHANK is a numerous and well-known species, and many are to be found in these islands all the year, although the birds bred here are few in comparison with the migrants which annually visit our shores. In the cold season they frequent and feed by the sea, over those extensive flats which are left bare by every receding tide, and the birds are then seen in flocks; in the spring, however, they retire to fens and marshes, near pools or lakes, and to the banks of rivers.

Drainage and modern improvements have to a great extent diminished the area of the breeding-places of the

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* *Scolopax Calidris*, Linnæus, Syst. Nat. Ed. 12, i. p. 245 (1766).

Redshank, but it still nests in many counties in England where the localities are suitable, being naturally more abundant in such as Kent, Essex, Suffolk, Norfolk, and Lincolnshire. In the latter, Mr. Cordeaux informs the Editor that Raventhorpe Common, near Brigg, which was formerly a great haunt of this species, now consists of enclosed fields of 50 to 100 acres, but notwithstanding this, the Redshanks still return thither to nest in those fields which are sown with clover. In Yorkshire it is now very local during the breeding-season, and the same may be said of Durham and Northumberland. In Cumberland, as Mr. Duckworth informs the Editor, a good many breed about the marshes of the Solway, assembling, as a rule, about the middle of March, but in 1882 by the 17th of February. In Wales, however, where the conditions of the country would seem favourable, it appears to be rare during the breeding-season, although not at all uncommon on the coast in autumn.

In Scotland the Redshank breeds in many localities—sometimes at an elevation of 1,200 feet—from the Border up to Sutherlandshire, where, however, it is very local; it has also been known to nest in the Hebrides and in the Orkneys, and Saxby several times obtained its eggs in the Shetlands.

In Ireland it is to be found during the nesting-season in most districts suitable to its habits; and at other times of the year it is abundant on the coast, especially on the bays of the west, where the receding tide leaves large expanses covered by *Zostera marina*, and there it is more frequent in winter than on the coasts of Great Britain.

The breeding range of the Redshank extends to Iceland, the Færoes, the coasts of Norway and Sweden, and as far north as Archangel in Russia. South of this line the Redshank is found nesting throughout Europe and in Morocco; and, visiting the Canaries, it pushes its migrations along the west coast of Africa to Cape Colony, and on the eastern side, through Abyssinia, as far as Natal. It is believed to breed in the Persian highlands, and is known to do so in

Turkestan and Kashgaria. In the cool season it visits the coasts, rivers, and islands of India in considerable numbers, and its migrations can be traced to Borneo, Java, the Philippines, and to the coasts of China, but not to Japan. It breeds in Mongolia, and in the southern districts of Siberia, but, roughly speaking, it does not go beyond 60° N. lat. Its reported occurrence in America is owing to a confusion with the Nearctic species *Totanus flavipes*.

The Redshank frequently breeds in small communities, and a score of nests may be found in a pasture or marsh of a few acres. The nest is well described by Colonel W. V. Legge, who says that it is concealed in the centre of a green tuft of grass, the blades of which are carefully bent over the top, and the openings by which the bird enters and leaves the nest being closed up on her leaving it, only a few tracks in the surrounding herbage betraying its existence. This is also the Editor's experience; but Mr. R. Gray says that on the banks of Loch Lomond the birds generally select a tuft of rag-weed or other plant, under the shade of which the eggs are deposited without much preparation in the way of nest-making—the few straws on which they are placed looking more like an accidental lining than one designed by their owners; and in very dry seasons, when the loch is low, the slight nests are placed on the mass of sticks and straws which have been carried by the winds and waves to high-water mark. The eggs, which are usually four in number, are of a stone or olivaceous-yellow ground-colour with purplish-brown spots and blotches; and measure about 1·75 by 1·2 in. They are laid in the first week in April, and fresh ones may be found until the middle of May, incubation lasting about sixteen days. When the nest is approached, the Redshank is very noisy, and practises many artifices to allure the intruder from the neighbourhood; indeed, at all times it is very clamorous, causing much annoyance to sportsmen by flying round and alarming other birds by its shrill note, which has obtained for it the local name of *took* in East Anglia and *tolk* in Scandinavia.

The food of the Redshank consists of aquatic insects, annelids, worms, crustaceans, and small mollusks. A writer in the first volume of 'The Naturalist' says of this bird :—"When running along the sands, the Redshank has the same kind of dipping motion for which some of the smaller Sandpipers are so remarkable. I was very much struck with the curious manner in which they dart their bills into the sand nearly its whole length, by jumping up, and thus giving it a sort of impetus, if I may use the word, by the weight of their bodies pressing it downwards." Colonel Irby has described (Ibis, 1861, p. 239) a flock of thirty or forty feeding in an oblique line in a shallow pool with their heads half under water, moving them from right to left with great rapidity, and making an audible noise. The Redshank will dive when wounded; and it has been seen to swim to shallower water on the other side of a creek rather than rise and fly across.* Mr. Gatcombe informs the Editor that he saw a flock of fifteen or sixteen enter a very shallow bay, and being deceived by the clearness of the water, they alighted quite out of their depth, and were obliged to swim until they found bottom, when they commenced wading and feeding as usual. He also narrates (Zool. 1881, p. 52) an instance of a Redshank which came on board ship on nearing Ireland, and, being fed and unmolested, ran about the deck quite tame, until land was sighted. Like its congeners, it sometimes perches on trees and rails, and Mr. Stevenson says that he has often seen the male bird in spring uttering his peculiar love-song while running along a gate, pirouetting and bowing like an amorous pigeon. Its flight is quick but somewhat wavering, and on the extended wing the broad white band is very conspicuous.

The Redshank is frequently mentioned in the L'Estrange accounts, and in the Northumberland Household-book its price is set down at three halfpence a-piece; Sir Thomas Browne also speaks of it as "of common food but no dainty dish," and at the present day it is but little esteemed.

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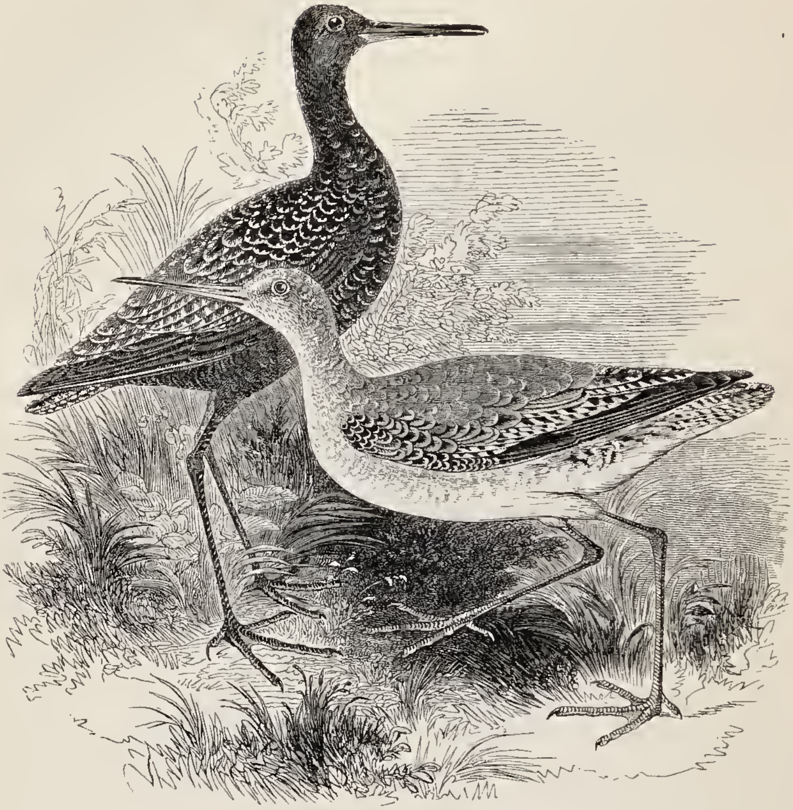
* In this species the webs between the toes are more developed than in its allies, and, like almost every other species of the group, it has been placed in a separate genus—in this case, *Gambetta*.

In winter the beak is black at the point, dark red at the base; the irides brown; from the angle of the mouth to the eye a dusky streak, over that and the eye a white streak; the top of the head, the back of the neck, the whole of the back and wing-coverts, ash-brown; the wing-primaries almost black; the rump white; the tail-feathers white, the inner ones tinged with grey, barred transversely with brownish-black; the chin, the neck in front, breast, belly, and under tail-coverts white, with a few slight dusky streaks in the line of the shafts of the feathers; legs and toes orange-red in the adult: lemon-yellow in birds of the year; the claws black.

In its spring plumage, when assuming by degrees the darker markings peculiar to the breeding-season, the greater coverts and tertials are varied with spots, brownish-black on the edges, and the white parts of the front of the neck, and all the under surface of the body, sides, and flanks are spotted and streaked with brownish-black. By the first week in June the lighter ash-coloured edges of the wing-coverts and tertials are more strongly marked with brownish-black; a few dark-coloured feathers appear on the back; the general plumage of the back is tinged with brown, and the black streaks and spots on the white surface of the neck and breast are more conspicuous.

The sexes resemble each other in their colours, but the females are larger than the males. The whole length of an adult female is about eleven inches. From the carpal joint to the end of the wing, six inches and three-quarters.

The nestling is of a dull buffy-white on the under, and rufous-buff on the upper parts; from the base of the bill to the eye a blackish streak; an indistinct streak on each side of the crown, and a distinct one down the centre, with mottlings on the nape, all of the same dark colour; back longitudinally streaked with irregular alternate markings of black and yellowish-white, inclining to rufous on wings; bill brownish; legs dull yellow.



Totanus fuscus (Linnæus*).

THE SPOTTED REDSHANK.

Totanus fuscus.

The Spotted Redshank is a somewhat rare and irregular visitor to the British Islands on the spring and autumn migrations. On the latter the majority are birds of the year, and these begin to make their appearance from August, an odd bird or two being occasionally obtained as late as November. Very few, if any, remain throughout the winter, for the Spotted Redshank seeks its food in fresh or brackish water, and is therefore driven southwards by the approach of frost. Even in the mild climate of Cornwall, and along the south-western coasts of England, it is not abundant, and its irregular visits are chiefly to the eastern counties; whilst on the western side of England, and in Wales, it is extremely rare at any season. Pennant records a specimen killed in Anglesea; it has occurred on the coast of Lancashire; and the late Mr. Heysham obtained it near Carlisle.

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* *Scolopax fusca*, Linnæus, Syst. Nat. Ed. 12, i. p. 243 (1766).

As regards Norfolk, Mr. Stevenson considers that, either from drainage of the fens, persecution by gunners, or some unknown cause, the birds which alight on their autumnal migration are fewer than in former years, whilst, on the other hand, examples are more frequent than formerly on the spring passage, when they exhibit more or less of the dark plumage characteristic of the breeding state. Specimens in the sooty-black garb may sometimes be seen in the London markets, and although it must not of necessity be inferred that they have all been killed in this country, yet Mr. Harting records one obtained in June, 1841, so close to the metropolis as Kingsbury Reservoir.

It is unnecessary to specify every county in which it has been noticed, for although less rare in the east than elsewhere, it has occurred as a straggler on inland streams and waters as far as Nottinghamshire. North of the Humber its visits are very irregular; and in Scotland, although it has been obtained along the east coast as far as Caithness, yet, according to Mr. R. Gray, it has not been known to occur on the west. The same authority states (B. of W. Scot. p. 291) that he finds, from a manuscript note in Messrs. Baikie and Heddle's work, "one was shot by Mr. Strang in Sanday, Orkneys, in September, 1849," but there appears to be no record of its occurrence in the Shetlands.

To Ireland its visits appear to be very rare, and until recently the bird Thompson says he shot near Belfast, was the only one on record. In the great frost of January, 1867, however, Mr. R. Warren, of Ballina, shot one in the estuary of the Moy, which divides Mayo from Sligo, and he again saw and heard, but could not obtain, this species in January, 1869, and on the 13th September of the same year; also in the autumn of several following years; but it was not until the 30th October, 1876, that he managed to shoot a third Irish specimen.

In summer the Spotted Redshank is to be found breeding in the northern portions of Norway and Sweden, Finland, and Russia as far south as Moscow. Elsewhere it is only known as a migrant, often lingering on its passage northwards until June, for on the 15th, 16th, and 17th of that month, in 1880, many passed over Heligoland. It crosses the Continent of Europe by many routes, and a tolerable number remain during the winter both on the northern and on the African side of the Mediterranean. On the latter it is sparingly distributed from Morocco to Egypt and up the Nile to Nubia; it is believed to visit the Somali coast, and Mr. Layard records an example from Cape Colony. In Asia its breeding-range does not extend to the extreme north, for Mr. Seebohm did not meet with it on the Yenesei, although Dr. Finsch obtained it at Obdorsk on the Ob; Middendorff found it breeding on the Boganida; and Radde obtained it on the Tarei-nor in September. Eastward it ranges to Kamtschatka, and south of the above line it occurs on migration in Japan, Mongolia, China, and Central Asia, visiting India, especially the northern provinces, in considerable numbers during the cool season, and occurring in Pegu and Ceylon, although very rare in the latter.

The late Mr. John Wolley, who was the first to make the eggs of the Spotted Redshank known to British ornithologists, contributed some interesting notes on its habits and nidification in Finland to the late Mr. Hewitson's 'Eggs of British Birds,' 3rd Ed. ii. pp. 326–328, but the following, and more correct version, is extracted from the original letter, dated 17th October, 1854, as communicated to Mr. Dresser, for his 'Birds of Europe,' by Professor Newton:—

"It comes as soon as the snow is off the ground, and lays its eggs with very little delay. At this time one may hear a singular call in the marshes, which the Finns express by the sound *reevat*, corresponding to a word in their language meaning *an evil spirit;* and one of the names of the bird is taken from it—a name always spoken with a spiteful emphasis by Reindeer-stalkers; for this 'Rivättu' is as mischievous to them as a Grey Crow is to a Highland forester, or a Gull to a seal-shooter. But the cry with which it spoils their sport is *tjeuty;* and from this another name is derived, generally coupled with the distinctive epithet corresponding to *black,* or with one meaning *burnt wood;* but whether this last is taken from the colour of the bird, or from a common place of resort for it, or from both, I am not sure. Certain it is that this black bird not unfrequently lays its eggs in a part of the forest which has formerly been burnt; and here is one of its most unexpected singularities —a marsh-bird choosing the driest possible situation, even hills of considerable height, and covered with forest-timber. I have myself seen two nests so placed; and one of them, at least, was on ground which, from the charred wood lying about, had evidently been burnt at some former period. They were nearly at the top of long hills, many hundreds of yards from any marshy places, good-sized fir-trees on all sides; but they were not in the thickest parts of the forests, and the vegetation on the ground about was very scanty, diminutive heather and such-like plants growing thinly amongst reindeer lichen in slight depressions on the ground —placed near some little ancient logs, so nearly buried, however, as to afford no shelter, the bedding only a few dry leaves of the Scotch fir. The bird sits sometimes so close that one is tempted to try to catch it in the hand, its white back conspicuous as it crouches with its neck drawn in. It either gets up direct or runs a short way before it rises; and then it flies round with an occasional *tjeuty,* or stands upon the top of a neighbouring tree, showing the full length of its slender legs, neck, and bill. But it is not till it has young that all its powers of eloquence are fully brought into play: it then comes far to meet any intruder, floating over him with a clear cry that echoes through the forest, or that is heard over a great extent of marsh, or it stands very near one, bowing its head, opening its beak quite wide in the energy of its gesticulations. The eggs, four in number, are of a rich green ground-colour when fresh, or sometimes of a bright brown. This year they were laid hereabouts at the end of May. The young are probably carried into marshy land as soon as they are hatched; for there they are whilst they are still very small. I am told that dry mounds rising out of swamps are sometimes chosen as breeding-places. The nests I have described were found quite by good luck, stumbled upon in walking through the forest, where the bird is scattered usually at rather wide intervals; one may see two or three pairs in the course of a long day's walk. It is so wary that I have never succeeded in watching it to its nest." The eggs, three of which are figured in Mr. Hewitson's work, are larger than those of the Common Redshank, and measure about 1·85 by 1·25 in. In its habits the Spotted Redshank resembles its congener, except that, as before observed, it is more partial to fresh water, and is seldom seen by the sea. Its food consists of worms, aquatic insects, small beetles, and minute univalves.

The figure in the foreground of the representations here given is from an adult bird in its perfect winter plumage, obtained in the London market; the figure in the background is from a specimen in summer plumage, obtained some years since in the fens of Cambridgeshire.

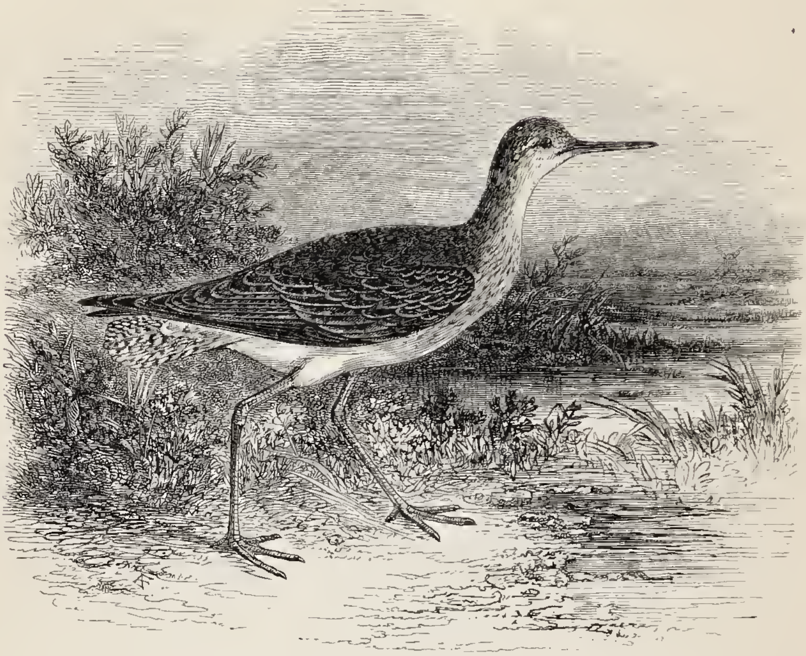
The adult bird in its winter plumage has the beak black, except at the base, where it is bright red; the irides dark brown; from the nostril to the eye a dusky-grey streak; above that a white streak as far as the eye; top of the head, back of the neck, and upper part of the back, ash-grey: lesser wing-coverts ash-grey, margined with white; greater coverts, the secondaries, and tertials, also ash-grey, with well-defined triangular spots of pure white along the sides of each feather; wing-primaries greyish-black, without spots; rump white; upper tail-coverts barred with dusky-grey and white; middle tail-feathers plain ash-grey, the outer feathers on each side, like the upper tail-coverts, are barred with dusky-grey and white; the chin white; sides and front of the neck white, tinged with ash-colour; breast, belly, vent, and under tail-coverts pure white; flanks slightly tinged and streaked with ash-grey; legs and toes vermilion-red, claws black.

The adult bird in summer has the beak nearly black, but the base of the lower mandible is dark red; the irides dark brown; the eyelid white; the whole of the head, and the neck all round, sooty-black: back, scapulars, all the wing-coverts, secondaries, and tertials, sooty-black, with well-defined triangular spots of pure white along the margin of the web of each feather, which is also tipped with white; the primaries black, with white shafts, but no white spots; breast and belly black, a few of the feathers with white tips; under wing-coverts white, with dusky-grey spots; axillary plumes pure white; under tail-coverts barred black and white; legs and toes claret colour, paler at the joints; claws black.

The sexes do not differ much in plumage, but the females are rather larger than the males, and in the breeding dress the chin is often white, and the under parts are of a less uniform black. An adult male measured in its whole length twelve inches and a half; from the carpal joint to the end of the wing, six inches and a half; the first quill-feather the longest in the wing.

In young birds of the year the plumage on the upper surface of the body is tinged with brown, and the white colour of the under surface of the body is clouded with ash-grey; the legs orange-yellow.

In the nestling the down of the forehead and under parts is more tinged with buff than in the Common Redshank; the black on the crown is more extended, and the black streak through each eye unites at the nape, the bill being proportionately longer.



TOTANUS FLAVIPES (Gmelin[*]).

THE YELLOW-SHANKED SANDPIPER.

Totanus flavipes.

THE first recorded British example of this American Sandpiper was killed at Misson, in Nottinghamshire, about two and a half miles north-east of Bawtry, on the borders of Lincolnshire, by one of a small party of men, residing at Misson, who got their living by shooting wild-fowl, during the season, which they sent to Doncaster for sale. This bird passed into the hands of the late Mr. Hugh Reid, of Doncaster, who, considering it to be a Wood Sandpiper, and a rare species, caused it to be carefully preserved by his own assistant, and sold it afterwards to the then Sir William Milner, Bart., by whom it was brought to London in the spring of 1855, and appropriated to the Author's use in this work. The figure and description here given were taken from this specimen, which is now in the Leeds Museum.

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[*] *Scolopax flavipes*, Gmelin, Syst. Nat. i. p. 659 (1788).

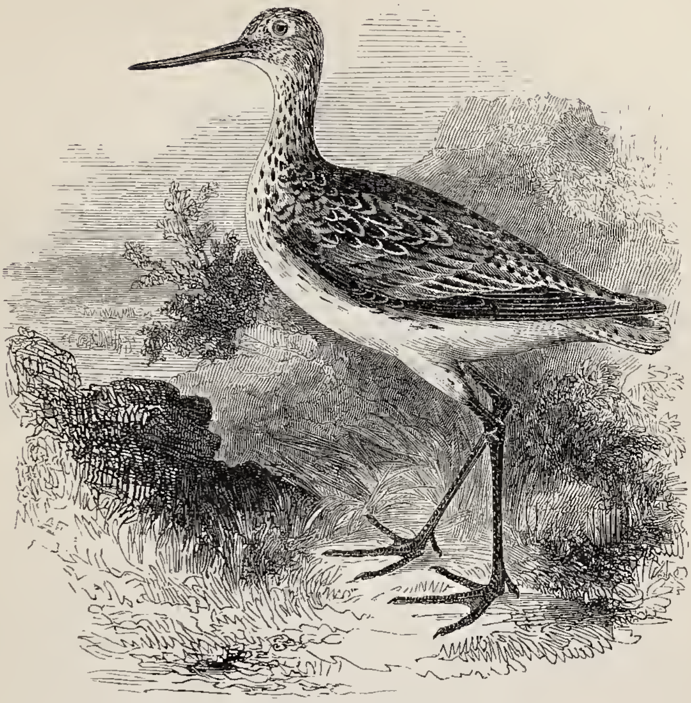
Another example was stated by Graham of York (Naturalist, 1858, p. 291), without a particle of substantiating evidence, to have been obtained near Tadcaster; but a second genuine specimen of this straggler was shot by Mr. Edward Vingoe, on the 12th September, 1871, from the margin of a pool in a saltmarsh near Marazion, about two miles from Penzance, as recorded by the late Mr. E. H. Rodd (Zool. 1871, p. 2807), with ample diagnosis and details.

The Yellow-shanked Sandpiper is a very abundant species in North America, breeding in high latitudes, and migrating southwards in autumn. On passage it is generally distributed throughout the greater part of the United States, with the exception of the Pacific side of the Rocky Mountains, where it is of rare occurrence; and in winter it goes south to the Bahamas, Mexico, Central and South America as far as the Rio de la Plata on the east, and Peru on the west.

The nest, according to Dr. Elliott Coues, is a mere depression lined with a few dried leaves or grasses, and the eggs, three or four in number, are of a clear clay colour, boldly blotched with umber and chocolate-brown; they measure about 1·7 by 1·15 in. The food of the Yellowshanks consists of small fishes, shrimps, worms, aquatic and other insects, and sandhoppers. Its habits are similar to those of other Sandpipers.

The whole length of the bird is ten inches and three-quarters; the bill, from the point to the commencement of the feathers on the forehead, one inch and five-eighths; wing, from the anterior bend to the end of the longest quill-feather, six inches, the first quill-feather the longest in the wing; the naked part of the leg one inch and a half, thence to the junction of the toes two inches and a quarter; length of the middle toe one inch and a quarter. The bill black, upper mandible rounded in form towards the point, the point itself projecting slightly beyond the end of the lower mandible; irides dark brown; top of the head, back of the neck, and upper part of the back, ash-grey, slightly varied with occasional darker-coloured streaks; wing-primaries black, the shaft of the first quill-feather white, the others with shafts of light brown; secondaries and wing-coverts greyish-black, the margins varied with white; the plumage of the lower part of the back almost black; the upper tail-coverts white, each of the few feathers between these surfaces have two semicircular bands of dark grey on a ground of white; tail-feathers white, with numerous ash-coloured bands, broadest on those of the centre, with about twelve narrower bands on each outside tail-feather, middle tail-feathers rather the longest of the series; wings reaching half an inch beyond the end of the tail; chin and upper part of the throat white; neck in front and diverging to each side of the breast white, streaked with ash-grey longitudinally; front of the breast, the belly, flanks, and under tail-coverts, pure white; all the bare parts of the legs and toes yellow; axillary plumes pure white banded with grey.

As the young of the Redshank, with pale yellow legs, has several times been mistaken for the Yellow-shanked Sandpiper, it may be pointed out that *T. flavipes* has a much more slender bill, a longer tarsus, and axillaries which are distinctly barred: not white like those in the Redshank.



TOTANUS CANESCENS (Gmelin*).

THE GREENSHANK.

Totanus glottis.

THE GREENSHANK is not very abundant as a species, and may be considered as a regular visitor in varying numbers at about the periods of the vernal and autumnal migration, on the passage to and from those northern localities in which it passes the breeding-season. It is to be found most frequently in the London market towards the end of April and in May, its plumage then exhibiting to some extent the darker streaks and spots which mark the commencement of the summer dress. It is as abundant on the vernal as on the autumnal migration, and although it is naturally more frequent on the marshes and tidal rivers which characterize the eastern districts, yet it has been obtained in nearly every county of England, including those most inland. By the end of July young birds are observed on their return migration, but they do not as a rule tarry long, and instances such as those recorded by Mr. J. H. Gurney, Jun. (Zool. s.s. p. 2537), of birds obtained in December and January in Oxfordshire and Berkshire, and by Mr. Rodd in Cornwall, are exceptional. Flocks of a dozen birds are rare even in autumn, and small parties, or single birds, are the rule.

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* *Scolopax canescens*, Gmelin, Syst. Nat. i. p. 668 (1788.)

In Ireland it is not uncommon in spring and autumn, especially in the vicinity of Clew Bay, co. Mayo, and, owing to the mildness of the climate, it is more frequently found there in winter than in England. Many localities in Ireland would seem to be suitable as breeding-grounds: nevertheless, it has not yet been known to breed in that island.

In Scotland, where the Greenshank is well known on migration, a tolerable number of pairs are also found breeding. Macgillivray, who was the first to record the fact, furnished the following notice of its habits as observed in the Hebrides to his friend Audubon[*] :—" The Greenshank is seen in the outer Hebrides early in spring, and generally departs in October, although I have observed individuals there in November. Previous to the commencement of the breeding-season, and after the young are fledged, it resorts to the shores of the sea, frequenting pools of brackish water at the head of the sand-fords, and the shallow margins of bays and creeks. Its habits are very similar to those of the Redshank, with which it associates in autumn. It is extremely shy and vigilant, insomuch that one can very seldom shoot it, unless after it has deposited its eggs. Many individuals remain during the summer, when they are to be found by the lakes in the interior, of which the number in Uist, Harris, and Lewis is astonishing. At that season it is very easily discovered, for when you are perhaps more than a quarter of a mile distant, it rises into the air with clamorous cries, alarming all the birds in its neighbourhood, flies round the place of its nest, now wheeling off to a distance, again advancing towards you, and at intervals alighting by the edge of the lake, when it continues its cries, vibrating its body all the while. I once found a nest of this bird in the island of Harris. It was at a considerable distance from the water, and consisted of a few fragments of heath and some blades of grass, placed in a hollow cavity scraped in the turf in an exposed place. The nest, in fact, resembled that of the Golden Plover, the Curlew, or the Lapwing."

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[*] Ornithological Biography, vol. iii. p. 483.

Since then nests of the Greenshank have been found in many parts of the mainland of Scotland, and Mr. Harvie-Brown informs the Editor that its breeding-range, which is extending, comprises portions of Caithness, Sutherland, Ross, Inverness, Argyle, and the north of Perthshire. Saxby states that on the 31st May, 1871, he flushed the bird off four eggs in Shetland, and saw others.

On the Continent the breeding-range of the Greenshank extends through Norway, Sweden, Northern Russia, and Asiatic Siberia, as far as the morasses on the slopes of the Stanowoi Mountains, where Middendorff observed the bird. It is very doubtful if it breeds in Denmark or any part of Northern Germany, and in the rest of Europe it is only known as a more or less regular migrant. Many individuals winter on the shores and islands of the Mediterranean and in Northern Africa, whilst others continue their course along both sides of that continent as far as Cape Colony and Natal, striking off to Mauritius. It is a winter visitor to Asia Minor, and in Turkestan Severtzoff says that it breeds up to an elevation of 4,000 feet. On migration it traverses Central Asia, and, visiting India and the islands of the Eastern Archipelago, it pushes on to Norfolk Island and Australia, where it is generally distributed. From Eastern Siberia it visits China, Japan, and the Kurile Islands. In America, Audubon obtained three specimens at Sand Cay, Florida, on the 28th May, 1832; and examples, said to be from Buenos Ayres and Chili, are in the Leyden Museum.

The situation of the nest of the Greenshank, as observed by Macgillivray, has been already described, and since his time numerous ornithologists have made the acquaintance of the bird in its breeding-haunts. Although, as stated, the nest is frequently at some distance from water, or even between dry hillocks amongst scattered pine-trees, as described in Gottland, yet it is often quite close to the edge of a loch. Mr. T. E. Buckley mentions (Pr. N. H. Soc. Glasgow, v. p. 144) finding one at Altnaharra in Sutherlandshire, containing three eggs, between two stones close to the edge of a loch, on the 24th May, 1869; and on passing the same place on the 26th May, 1871, he remembered the occurrence, and looked between the same two stones, when there was the Greenshank sitting so close on four eggs, that she did not move until touched with the point of a fishing-rod. The eggs, four in number,* are of a warm stone-colour, sometimes with an olivaceous tinge, blotched with purplish-grey, and spotted with dark brown, especially at the larger end; they average 1·9 by 1·3 in. When the young are hatched the old birds are very bold and vociferous, coming down close to the intruder's head with a swoop, and then shooting up into the air almost perpendicularly. As soon as the young can fly, they join in flocks, and come down to the shores.

The Greenshank feeds on the fry of fish, worms, beetles, insects of various species, and small crustaceans and mollusks. Like the Curlew, it often visits meadows and seeks its food among the cow-droppings. Its flesh is excellent, as was long since observed by Pallas. Its note is a loud *chee-weet, chee-weet;* and its flight is strong and rapid, like that of most of its congeners. Similar is its habit of perching on trees, especially during the love-season.

The beak of the Greenshank is about two inches long, nearly black, and very slightly curved upwards†; the irides hazel; the upper part of the head, the cheeks, the neck on the sides and behind, marked with well-defined dark lines, on a ground-colour of greyish-white; the back, wing-coverts, and tertials, ash-brown, edged with buffy-white; quill-primaries uniform dusky-black; tail-feathers white, those in the middle barred transversely, the outer feathers striped longitudinally with ash-brown; chin white; front of the neck to the breast, and the sides, under the wings, white, slightly marked longitudinally with ash-colour; breast, belly, vent, and under tail-coverts, pure white; legs and toes olive-green; claws black. The specimen from which the figure was taken was killed at the beginning of May; the dark streaks and spots on the neck are well defined, and almost black; the centre of some of the feathers on the back is in change to greenish-black, which is the prevailing tint on the upper surface of the body when the plumage of the breeding-season is confirmed, and the light-coloured margins of the greater wing-coverts, and the tertials especially, are varied with dark spots. The more uniform ash-grey is the plumage of winter; the well-defined dark lines and spots assumed in summer are not produced by any partial moulting, or the production of new feathers, but by an alteration in the colour of the old feather.

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* Mr. Dresser says (B. Europe, viii. p. 141) that Mr. Booth told him that he once took eight Greenshank's eggs out of a nest in Sutherlandshire: doubtless the produce of two females.

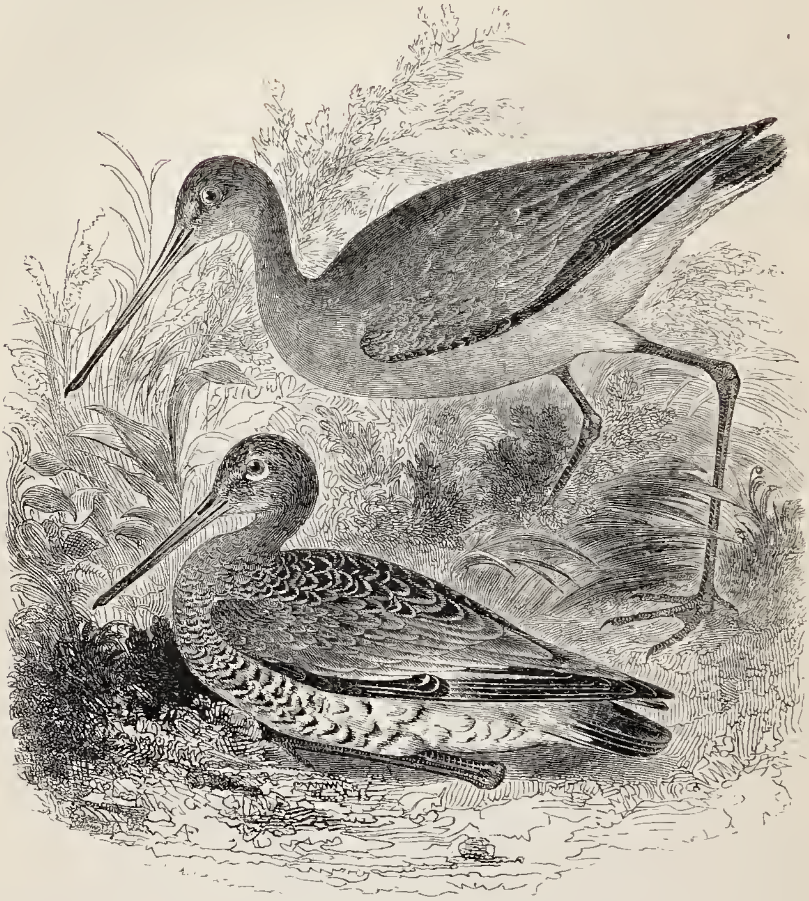
† Owing to this peculiarity, the Greenshank has had a genus, *Glottis*, assigned to it by Nilsson.

The whole length of the adult Greenshank is about twelve inches; from the carpal joint to the end of the wing, seven inches; the first quill-feather the longest.

In the immature bird the dorsal feathers are margined with fulvous, and the chest and flanks are minutely pencilled with blackish-grey.

A nestling obtained at Muonioniska on the 11th July, 1879, is ashy-white on the under parts; the upper parts buff, longitudinally streaked with black; a rather triangular dark patch on the crown, and a faint streak from the base of the bill through the eye, uniting in waved lines at the nape.

LIMICOLÆ. *SCOLOPACIDÆ.*



LIMOSA ÆGOCEPHALA (Linnæus*).

THE BLACK-TAILED GODWIT.

Limosa melanura.

LIMOSA, *Brisson*†.—Bill very long, rather thick at the base, compressed, slightly curved upwards; both mandibles grooved laterally to within a short distance of the point, which is somewhat dilated and blunt; tip of the upper mandible projecting beyond the lower one. Nostrils basal, placed in the lateral groove, narrow and longitudinal. Wings pointed, of moderate length, the first quill-feather the longest. Tail short and even. Legs long and slender, a great part of the tibia naked. Feet four-toed, three in front, one behind ; outer and middle toes united at the base by a membrane, the inner toe nearly free ; middle claw dilated, recurved, and pectinated ; hind toe short, and articulated upon the tarsus.

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* *Scolopax Ægocephala*, Linnæus, Syst. Nat. Ed. 12, i. p. 246 (1766); from αἴξ a goat, and κεφαλή a head.

† Ornithologie, v. p. 261 (1760).

Godwits, of which in Britain there are two species, were more common formerly than they are at present. Sir Thomas Browne, when writing some of his notes on natural history, two hundred years ago, says, "Godwits are taken chiefly in marsh-land, though other parts are not without them : they are accounted the daintiest dish in England." This bird was considered an article of luxury in Ben Jonson's time.

> "Your eating
> Pheasant and *Godwit* here in London, haunting
> The 'Globes' and 'Mermaids'; wedging in with lords
> Still at the table."
>
> *The Devil is an Ass*, iii. 3.

And Thomas Muffett, that "ever famous doctor in physick," as he is called in the title-page to 'Health's Improvement,' says (page 99), "but a fat *Godwit* is so fine and light meat, that noblemen, yea, and merchants too, by your leave, stick not to buy them at four nobles a dozen."

It was formerly the practice of some of the fenmen in Lincolnshire to fatten a few Godwits on bread and milk with the Ruffs when they happen to catch any, and the Author, many years ago, saw several that had been sent up to the London Market for sale after having been thus fed and fattened. Pennant says (Brit. Zool. ii. p. 351) that in his time these fattened birds sold for five shillings each.

The changes in colour which our two Godwits undergo in spring during the assumption of the perfect dress of summer, and again in the autumnal moult leading to the plumage of winter, the general similarity in the colours of the two species, and the difference in the size of the sexes (the females being considerably larger than the males), have led to confusion in the works of some of the earlier writers on British Birds ; but in several species of the family *Scolopacidæ* now under consideration, the tail-feathers suffice to supply good specific distinctions, as shown in the instance of the Green and Wood Sandpipers lately described. The Godwit of the present article may be known at all ages and seasons from the smaller one next in order, by the tail-feathers, the terminal two-thirds of which are invariably black; while in the following species the tail-feathers are as invariably barred throughout their whole length with black and white. These permanent distinctions have suggested the names now in use.

The Black-tailed Godwit was accustomed to resort to the marshes of Norfolk and the fens of the Isle of Ely and of Lincolnshire, down to about the year 1829, by which time the drainage of suitable haunts, and the persecution of gunners, netters, and egg-gatherers, had done their work. A few pairs appear to have nested irregularly until a later date, for Mr. E. S. Preston is said to have obtained three eggs which were stated on good evidence to have been taken near Reedham, in Norfolk, in 1847 (Stevenson's B. of Norfolk, ii. p. 250). A few birds now linger for a few days in spring about the localities where their predecessors found suitable breeding-grounds, but they pass on, and at the present day the Black-tailed Godwit is only known as a visitor on migration.

The autumnal passage commences in August, and from that date onwards this species may be observed in small numbers along the flatter portions of the coasts of Great Britain from Shetland to Cornwall, only a few occurrences being recorded in winter. It is also an irregular straggler to inland waters. By April the return passage commences; and on both migrations the western as well as the eastern shores of England are visited, but this species is never so numerous as its congener the Bar-tailed Godwit. Although a tolerably regular visitant to the morasses of the Solway Firth, the Black-tailed Godwit is rare on the west coast of Scotland, and its occurrences are only irregular, and generally in autumn, along the east coast. In Ireland its appearance is very rare, and, as a rule, in autumn or early winter; but Mr. R. Warren records (Zool. 1877,

p. 288) an example in full breeding-plumage shot on the Moy, on the west coast, in May, 1863.

The Black-tailed Godwit has been known to breed in the Færoe Islands, and there can be no doubt that it does so in Iceland, to which it is an annual spring visitor, arriving about the end of April, and being known there by the name of *Jardrœka*, or 'earth-raker.' In Norway it breeds sparingly, as far north as Finmark, but it does not appear to nest in very high latitudes in either Sweden or Russia; it is rare near Archangel, nor is it known to range east of the Ural, or to breed above 59° N. lat. It nests in numbers in the marshes of the Vistula, as far south as Lublin; sparingly in Silesia; and in suitable localities in Northern Germany, Denmark, Holland, and Belgium, and perhaps in the marshes of Picardy. In other countries of Europe it is a migrant; its winter quarters commencing at the shores of the Mediterranean, and its range extending to Morocco, the Canaries, and Madeira, on the west, whilst on the east it visits Egypt, and goes up the Nile to Abyssinia. It is said to breed on the shores of the Black Sea, on the Kirghiz steppes near the mouth of the Volga, and in Turkestan; and during the cool season it visits India, Ceylon, Burmah, the Malay Peninsula, the Eastern Archipelago, Australia and Polynesia, the eastern form, *Limosa melanuroides* of Gould, being of doubtful distinctness. The Black-tailed Godwit's range would also appear to extend across the more temperate portions of Siberia to the Sea of Okhotsk, Japan, and China: a pair obtained at Shanghai in May by Père David being in the Paris Museum.

The Black-tailed Godwit has once been recorded by Fabricius from Greenland, and another is said to have been obtained at Godhaab prior to 1820 (Ibis, 1861, p. 11); but in North America the representative of this species is *Limosa hudsonica*, which is smaller, and has black instead of white axillaries.

Its flight in the breeding-season resembles that of the Redshank, and like that bird it flies round any intruder in the marsh, but in more distant circles and much higher in the air. It is called provincially "Shrieker," "Yarwhelp," and "Barker," but its note, though loud, is far from inharmonious. Black-tailed Godwits commence laying their eggs early in May, and the nest, which is composed of dry grass and other vegetables, is concealed amongst the coarse herbage of the swamps and low meadows. Hoy mentions that, when disturbed, they are clamorous, flying round and vociferating the cry of *grutto, grutto, grutto*, by which name the bird is known among the country people in Holland. The eggs are four in number, of a light olive-brown, blotched and spotted with darker brown, rather pear-shaped, and averaging 2·2 by 1·5 in. The food of these birds consists of insects and their larvæ, worms, and almost any other soft-bodied animals.

This Godwit, in the winter plumage, has the beak black for one-third of its length, the basal portion pale yellowish-brown; the irides hazel; before and over the eye a white patch; the whole of the head and neck ash-brown; the scapulars, wing-coverts, back, and tertials, ash-brown, the coverts and tertials with lighter-coloured edges; primary quill-feathers dusky-black, the shafts white, with some white at the base of all beyond the second, forming a bar across the wing; basal third of the tail-feathers white, the terminal two-thirds black, except the outer tail-feather on each side, which have a larger proportion of white; chin, breast, and belly, light greyish-ash; vent and under tail-coverts white; legs and toes dusky-brown; the claws black.

The whole length of a female is seventeen inches; of the beak alone four inches. From the carpal joint to the end of the first quill-feather, which is the longest in the wing, nine inches; length of the tarsus three inches; of the naked part above, one inch and three-quarters;* weight about 13 oz.

The male in summer has the beak black for half its length from the point, the basal-half orange; irides hazel;

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* In an unusually large bird obtained near Taunton, in February, in the collection of Mr. Cecil Smith, the bill measures 4·7, and the tarsus 3·5; the wing, however, is only 8·5. In the Archangel Museum Messrs. Alston and Harvie-Brown observed a specimen which measured—bill 4·87, tarsus 3·8, tibia nearly 2·8, wing 9·8 (Ibis, 1873, p. 69).

from the gape to the eye a dark streak, produced by small black spots on feathers of a reddish-brown; over this and around the eye a ring of pale brown; top of the head and the ear-coverts reddish-brown streaked with black; the neck before and behind, a reddish fawn-colour; the feathers on the back dark brown, almost black at the base and on the centre; primaries and tail rather brighter than in the female; the breast white, barred across with rufous-brown and dark brown; the thighs and belly more sparingly barred with dark brown only; vent and under tail-coverts white; legs, toes, and claws, brownish-black.

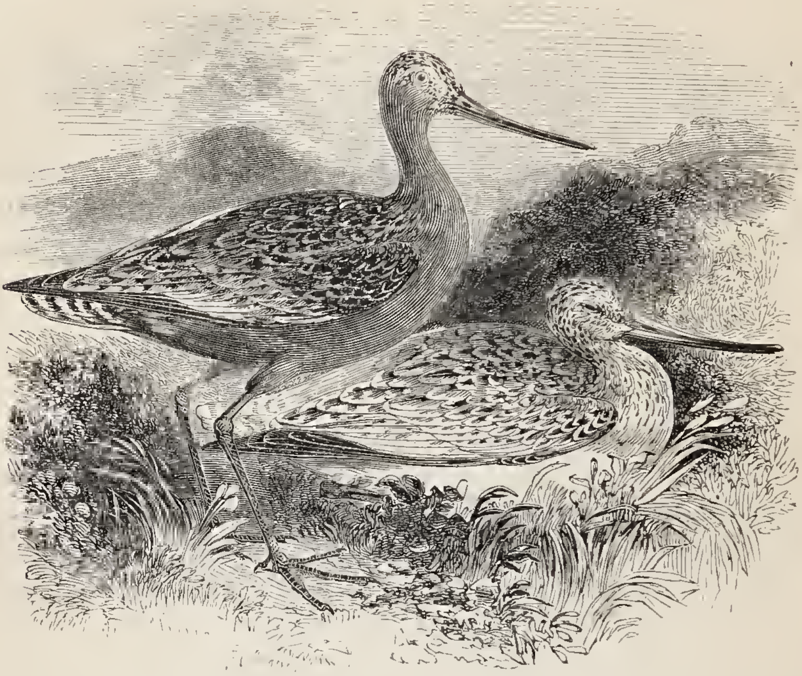
The whole length of a male is sixteen inches; beak alone three inches and a quarter; weight about 10 oz.

The female in summer is duller on the head and neck; the back, scapulars and secondaries are of a dull earthy grey with comparatively few black and rufous markings; the dark bars on the breast are fainter and less regular; and the under parts are whiter than in the male.

Young birds of the year are during their first autumn tinged with red on the neck, and may be distinguished throughout their first winter from old birds, by their smaller size, and by the ash-brown tint which pervades their neck and the upper part of the breast: the white of the lower part of the breast is also clouded with ash-grey.

The nestling is yellowish-buff, streaked with black on the crown, neck, and back; a narrow dark loral streak; under parts yellowish-white.

In the illustration at the commencement of the account of the Black-tailed Godwit, the figure in the front sitting down represents the male in summer plumage; the larger figure behind is the female in the more uniform and sombre plumage of winter.



Limosa lapponica (Linnæus*).

THE BAR-TAILED GODWIT.

Limosa rufa.

The Bar-tailed Godwit is in its habits in this country somewhat similar to the Black-tailed Godwit last described, but it has never been proved to have bred in any part of the British Islands. The autumnal arrivals, consisting principally of young buff-breasted birds which are at first very tame, commence in August, and from that month until November varying numbers may be found on the mud-flats and estuaries of our coasts. The duration of their subsequent stay depends to some extent upon the weather, but, as a rule, occurrences in the middle of winter are not very numerous. In April a few birds make their appearance from the south, but the bulk of the return migration is not observed until May, and Mr. Stevenson says that the 12th of that month is known to the Breydon gunners as "Godwit day." By this time the adult birds have assumed the rich red nuptial garb, and it was from a Yarmouth example that the figure of the male bird in perfect summer plumage as here represented standing up, was taken. The birds of the year are later in assuming this ruddy tint, and some of these non-breeders remain on the coast throughout the summer; a circumstance which, coupled with the late stay of some of the adults, has given rise to unfounded surmises that this species has bred in the British Islands. For instance, Dr. Dewar shot five specimens on the 26th June, 1858, on Bernera, in the Sound of Harris, and he informed Mr. Gray that they had apparently paired and seemed by their habits to have their nests at no great distance (B. of W. of Scot. p. 306). In Ireland this species is tolerably common in autumn and winter, and on its spring migration it particularly affects the west coast, assembling on the estuary of the Moy, according to Mr. Warren (Zool. 1877, p. 288), in large flocks early in March, and increasing in numbers up to April, when some leave, although many remain through May and June. On the 11th June, 1872, he saw a flock of over a hundred birds near Bartragh, all in the pale plumage of immaturity, and amongst many similar assemblages he has detected very few red-breasted ones. On migration, examples of the Bar-tailed Godwit are occasionally obtained in some of the inland counties; and as regards the direction of the spring flight, it would seem that the main body cross to Scandinavia from Norfolk and Lincolnshire, comparatively few being seen to the north of the Humber in breeding-plumage.

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* *Scolopax lapponica,* Linnæus, Syst. Nat. Ed. 12, i. p. 246 (1766).

The Bar-tailed Godwit is only a migrant along the greater part of the coast of Norway: its breeding-range commencing in Finmark, where Canon Tristram states that he obtained eggs. In Lapland the late Mr. Wolley and others procured authentic eggs; and it probably nests throughout Finland and Northern Russia, and Siberia. It is, however, a rare visitant to Archangel, and Messrs. Harvie-Brown and

Seebohm only observed it once on the Petchora. On the coasts of the Baltic, Northern Germany, Denmark, and Holland, it is a regular migrant, but in the latter country and in France, it is less abundant than the preceding species. It visits the Spanish Peninsula, Morocco, and the Canaries, and has been traced down the West African coast as far as the Gambia. It is irregularly distributed in winter along the shores and islands of the Mediterranean, and thence to Northern and North-eastern Africa, the Red Sea and the Somali country. It is also a winter visitor to the Mekran coast and Kurrachee; and Blyth states (Ibis, 1865, p. 36) that there is an Himalayan example in the Derby Museum of Liverpool, and that Mr. Hodgson obtained it in Nepal; but it has not as yet been recorded in Southern India or Ceylon. In Siberia Mr. Seebohm obtained a solitary example in about 70° 35′ N. lat. on the Yenesei; and Middendorff found breeding on the marshes of the Taimyr, in 74° N. lat., a bird with a more barred rump which has been distinguished as var. *novæ-zealandiæ*, G. R. Gray, and as *L. uropygialis* by Gould, who, however, in his 'Birds of Great Britain,' stated that he believed it was not separable. This form, of questionable distinctness, extends to Kamtschatka and Bering Island, migrating to Japan, China, the Eastern Archipelago, Australia and New Zealand.

Details respecting the breeding habits of the Bar-tailed Godwit are scarce. The late Mr. Wolley obtained its eggs at Salmojervi, in Finland, on 29th May, 1858, but no account of his discovery has been published beyond his statement to Hewitson (Eggs Brit. Birds, ii. p. 343), that "this species breeds in marshes, chiefly in the neighbourhood of mountains, and gets up so warily from its nest that it is difficult to find it." Two eggs from Rowa, near Kittila in Finland, are figured in the above work; and others have since been obtained by various collectors. The ground-colour is light olive-green blotched and streaked with brown, and they measure 2·1 by 1·45 in., being similar to but rather smaller than those of the Black-tailed Godwit.

The food of the Bar-tailed Godwit consists of aquatic insects, worms, small crustaceans, and mollusks. Its note is described by Mr. Harting as sounding like *lou-ey, lou-ey,* and by this the birds in their winter dress may be distinguished at a distance from the Whimbrel, which they otherwise resemble (B. Middlesex, p. 184). It is fond of the company of other waders, and may easily be attracted by an imitation of their notes. Owing to their long bills, Godwits are not unfrequently called "sea-woodcocks," and Mr. Stevenson states, on the authority of Mr. Dowell, that by the local Norfolk gunners the smaller males, more abundant in the spring flocks, are called "picks," whilst the females, and those found singly in autumn, are called "scamells." It will be remembered that the drunken Caliban offers to Stephano, among other dainties, "young *scamels* from the rocks." (Tempest, Act ii. Sc. 2.)*

In the winter plumage the beak is black at the point, the basal portion pale reddish-brown; irides dusky-brown; top of the head and back of the neck ash-brown, each feather with a central streak of darker brown along the line of the shaft; back and scapulars dark brown, edged with pale wood-brown; all the wing-coverts, secondaries, and tertials, dark brown, with greyish-white edges; primary quill-feathers dusky-black, with white shafts, the shorter ones edged with white; rump and upper tail-coverts white, barred with brown; tail-feathers barred throughout their whole length with dark brown, and greyish-white in nearly equal breadth; neck in front ash-brown; breast, belly, and vent, white; under tail-coverts white, with only one or two transverse bars of brown towards the end; legs and toes dark blue, the claws black.

A female, which, as in the Black-tailed Godwit, is larger than the male, measured sixteen inches; the length of the beak three inches and three-quarters; from the carpal joint to the end of the first quill-feather, which is the longest, eight inches and a half. The legs of this species are much shorter in proportion to the size of the bird than those of the Black-tailed Godwit, and become another mark of distinction. In the female described, the tarsus measured but two inches in length, and the naked part of the tibia above it only one inch.

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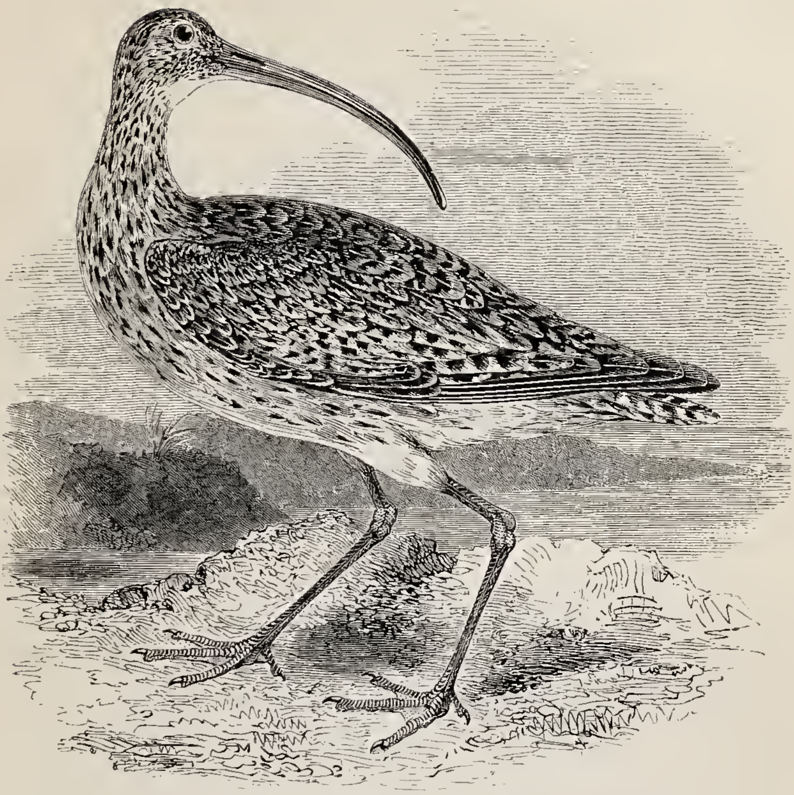
* Mr. Harting, who is an authority on the Ornithology of Shakespeare, considers that the poet wrote "sea-mells" or "sea-malls," *i.e.*, Sea-gulls, which at that time were esteemed for the table.

A male, apparently in the perfect plumage of summer, killed during the second week of May, 1821, has the beak nearly black, reddish-brown at the base; irides dusky-brown; head and neck rich bay, or chestnut-red, the feathers on the forehead, top of the head, and down the back of the neck, streaked longitudinally with black; the space between the base of the beak and the eye, and the feathers forming the ear-coverts, spotted with black; the upper part of the back, the shoulders, lesser wing-coverts, and tertials, black, the edges of the feathers of a pale reddish-wood brown; greater wing-coverts, as in winter, dark brown, edged with greyish-white; primary quill-feathers almost black, those nearest the secondaries tinged with dusky-brown on the inner webs, and edged with white; lower part of the back white, with a few small feathers of a dark colour intermixed; upper tail-coverts barred with black, on a ground-colour of pale reddish-brown; tail-feathers nearly as in winter, but the white is tinged with bay; neck in front, breast, belly, vent, and under tail-coverts, nearly uniform rich bay, with a few dark streaks before the carpal joint of the wing; legs, toes, and claws nearly black.



NUMENIUS ARQUATA (Linnæus*).

THE COMMON CURLEW.

Numenius arquata.

NUMENIUS, *Brisson*†.—Beak long, slender, and decurved to the point, which is hard ; upper mandible rather longer than the lower, rounded near the end and grooved along three-fourths of its whole length. Nostrils lateral, linear, pierced in the groove. Legs rather long, slender ; tibia partly naked ; three toes in front, united by a membrane as far as the first articulation ; one toe behind articulated upon the tarsus, and touching the ground. Wings moderate, the first quill-feather the longest in the wing.

THE CURLEW is so common a bird as to be well known on almost every part of our coast, where it obtains a living

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[*] *Scolopax Arquata*, Linnæus, Syst. Nat. Ed. 12, i. p. 242 (1766).

[†] Ornithologie, v. p. 311 (1760) : from νεος, new, and μήνη, moon : *i. e.* crescent-shaped, like the new moon.

from the middle of autumn, through the winter, till the pairing season of the following spring. It frequents the sea-shore and its extensive sandy flats during the ebb tide, seeking for small crustacea, marine insects, worms, &c., with which to satisfy its hunger, retiring to open fields in the vicinity when the rising tide covers the feeding-ground. Sir William Jardine has described from personal observation the habits of these birds on the Solway:—"They retired regularly inland after their favourite feeding-places were covered. A long and narrow ledge of rocks runs into the Frith, behind which we used to lie concealed, for the purpose of getting shots at various sea-fowl returning at ebb. None were so regular as the Curlew. The more aquatic were near the sea, and could perceive the gradual reflux; the Curlews were far inland, but as soon as we could perceive the top of a sharp rock standing above water, we were sure to perceive the first flocks leave the land, thus keeping pace regularly with the change of the tides. They fly in a direct line to their feeding-grounds, and often in a wedge-shape; on alarm, a simultaneous cry is uttered, and the next coming flock turns from its course, uttering in repetition the same alarm note. In a few days they become so wary as not to fly over the concealed station. They are one of the most difficult birds to approach, except during spring, but may be enticed by imitating their whistle." One cry peculiar to the Curlew sounds like *corlieu* or *courlie;* whence its English and French name.

Towards the end of March, or early in April, the flocks of Curlews begin to retire from the coast and seek the breeding-grounds, where they soon break up into pairs. The late Mr. Selby felt assured that this movement was not so confined in extent as had been supposed; that the winter visitors of the coast of Northumberland did not satisfy the migrative impulse by a flight of a few miles into the interior; but that these retired to the Highlands, or northern parts of Scotland and its isles, and many visited high northern latitudes to be hereafter mentioned, thus giving place upon the moors and open grounds of the border counties to those birds which had wintered in the southern parts of the kingdom. Be this as it may, our estuaries, even in summer, are seldom without birds which are not breeding, and early in autumn the young birds begin to make their appearance from the moors; the old ones arriving in October and November. Mr. Cordeaux says that there is no shore-bird which so frequently strikes against lanterns and light-ships as the present, especially in fogs, or on dark rainy nights. Mr. Stevenson, on the other hand, says that though Curlews fly round and round for hours, they are never known to strike the glasses of the lanterns.

In spite of the gradual reclamation of waste land, and the spread of cultivation, the Curlew still breeds in a good many counties of England. Mr. Rodd states that it nests annually in Cornwall on the large moors about Rough-tor and Brown-willy, where the young are eagerly sought as delicacies by the moor-men; and in Devonshire it breeds on Dartmoor and Exmoor. In Somersetshire and Dorsetshire its nests have occasionally been found; and a few pairs may be scattered through Wilts and Hants; but in the south-eastern and eastern counties it has never been known to breed; nor does it even appear to nest at the present day in Lincolnshire, although, as Mr. Cordeaux informs the Editor, it does so on Thorne Waste, near Doncaster, just beyond the boundary of that county. On the moorlands and hills of Wales it is a tolerably abundant breeder, and it nests near Church Stretton in Shropshire. The high moors of Derby, Yorkshire, and Lancashire offer many congenial resorts, and northwards it is to be found breeding as far as the Scottish border. About the Solway it is abundant, and Mr. Duckworth informs the Editor that he has found the nest within four miles of the centre of the city of Carlisle. It also breeds in the Isle of Man; and in Ireland it nests in many of the large bogs, both in Queen's Co. and other central districts, and also in Mayo and Sligo. In Scotland, where it is generally distributed during the breeding-season in suitable localities, frequenting the coasts during the rest of the year, the Curlew is called a Whaap, or Whaup, which in Jamieson's

Scottish Dictionary is said to be a name for a goblin, supposed to go about under the eaves of houses after nightfall, having a long beak. Sir Walter Scott refers to this supposed connection of a long beak with a suspicious character in his 'Black Dwarf' (chap. ii.), in a dialogue between Hobbie Elliot and Earnscliff, in the evening on Mucklestane Moor. The former says, "What need I care for the Mucklestane Moor ony mair than ye do yoursel, Earnscliff? To be sure, they say there's a sort o' worricows and lang-nebbit things about the land, but what need I care for them?" And this enables us to understand the fag-end of a Highlander's prayer, to be saved harmless "from witches, warlocks,* and aw lang-nebbed things." Saxby says that the Shetlanders regard with horror the very idea of using so uncanny a bird as food; in fact, a visitor who did so was afterwards alluded to, almost in a whisper, as "the man that ate the Whaup."

Although the Curlew nests in abundance in the Orkney and Shetland Islands, yet in the Færoes Major Feilden thinks that it is only an autumnal and winter visitant, giving place as a breeding species to the Whimbrel (Zool. 1872, p. 3248). It is common in Scandinavia in summer, and from thence probably come the immense numbers which Mr. Gätke describes as passing over Heligoland. For instance, on the night of the 19th–20th November, 1878, he says, "The whole atmosphere one mass of these birds, the noise of their call-notes quite unearthly and bewildering; countless smaller waders mixed with them." It breeds in Russia, Poland, and sparingly in Northern Germany; in Holland, especially on the peaty moors of Brabant, and perhaps in Belgium and Picardy; also on some of the wastes of Britanny. In Central and Southern Europe, and in North Africa as far as Egypt, it is well known on migration and in winter; and, stretching westward as far as the Azores, the range of the Curlew can be traced along the western side of Africa to Damara Land. On the east coast as far as Natal, in Madagascar, and across Asia from the Ural to Japan, occur forms which have been distinguished by many names, and respecting which few ornithologists are agreed; but the main points appear to be that in the eastern form the bill is on the average longer and more robust; the rump is nearly white, and so are the axillaries—characteristics which are seldom found united in western birds. If these differences depend upon age or season, and are not sufficient to warrant specific distinction, then the range of our Curlew extends to South Africa; across Asia to Japan and China; and, through India, down to the Malay Archipelago, where it is intersected by that of *N. cyanopus*, Vieillot (*N. major*, Schlegel, *N. australis*, Gould), distinguishable by the strong rufous-grey bars on the rump and upper tail-coverts, which goes from Amoor Land to Australia. In America the representative species is *N. longirostris*, which has rufous axillaries.

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* A warlock, or wizzard—a man who is supposed to be in compact with the devil.—*Jamieson's Dictionary.*

The nest of the Curlew is slight: a few leaves or other dry materials, carelessly brought together among long grass or heath, or in a tuft of rushes, is all that appears. The eggs are three or four in number, pear-shaped, and generally placed with the smaller ends together: the egg measures 2·75 by 1·9 in., and is of an olive-green, blotched and spotted with darker green and dark brown. Incubation sometimes commences in April, but May is the usual month. The young run almost as soon as hatched, but are unable to fly for a considerable time. In confinement these birds become tame enough to follow their feeder for the usual meal, and Mr. C. M. Adamson gives an interesting account of two young ones which he caught when unable to fly, and placed in a walled garden. He got them to feed by placing a quantity of worms in holes dug in the ground, and then cautiously driving the birds in the direction of the holes. At first they did not appear to notice the worms; however, after passing them several times very slowly, one was seen to hesitate in his walk and look sideways into the hole. This was enough: he began to devour the worms at once, and he never afterwards required to be driven to the holes. They lived until the winter, over which it seems almost impossible to keep such birds, they naturally seeking the shores during winter to procure food. They were expert fly-catchers ('Some more Scraps about Birds,' p. 59). Montagu observed that they could swim with ease. This species often has been observed to perch on trees, presenting a very ungainly appearance.

The Curlew is an excellent bird for the table when young, and before it has had time to feed on the sea-shore, but it soon becomes unpalatable. It was formerly in high estimation, for by the L'Estrange 'Household Book' it would appear that a single Curlew was worth from five to six pence (and even twelve pence in the Lord North Accounts), the price of three Woodcocks. Our ancestors evidently estimated the value of a wild bird, to some extent, by its size; and it must also be remembered that although live Curlews were doubtless more common then than now, dead ones were probably far rarer. Woodcocks could be caught with springes, which were vain engines against the wary Curlew, nor would the cross-bow or the arquebuss be much more effective. At a still later date Willughby says:—"This bird, for the goodness and delicate taste of its flesh, may justly challenge the principal place among Water-fowl. Of this our Fowlers are not ignorant, and therefore sell them dear. They have a Proverb among them in Suffolk:—

A Curlew, be she white, be she black,
She carries twelve pence on her back."*

The wariness of Curlews is well known to shore-shooters, and, owing to their keen sense of smell and powers of sight, they are very difficult of approach; but their hearing does not appear to be so acute as in many other birds. Their shrill screams soon spread the alarm among other 'fowl,' and the Editor has seen a Curlew, after shrieking wildly over the head of a sleeping seal, swoop down, and apparently flick with its wing the unsuspecting animal upon which the stalker was just raising his rifle. Yet it occasionally falls a victim to its curiosity, and in some places a trained dog of red colour, as much like a fox as possible, is employed to attract the attention of the birds and induce them to pursue him, when he entices them within shot of his master, who lies hidden in a dyke.

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* It is possible that the 'black' may refer to the Glossy Ibis, which is said to have been called the Black Curlew by the marshmen, but it is not unlikely that the word was introduced for the sake of rhyme.

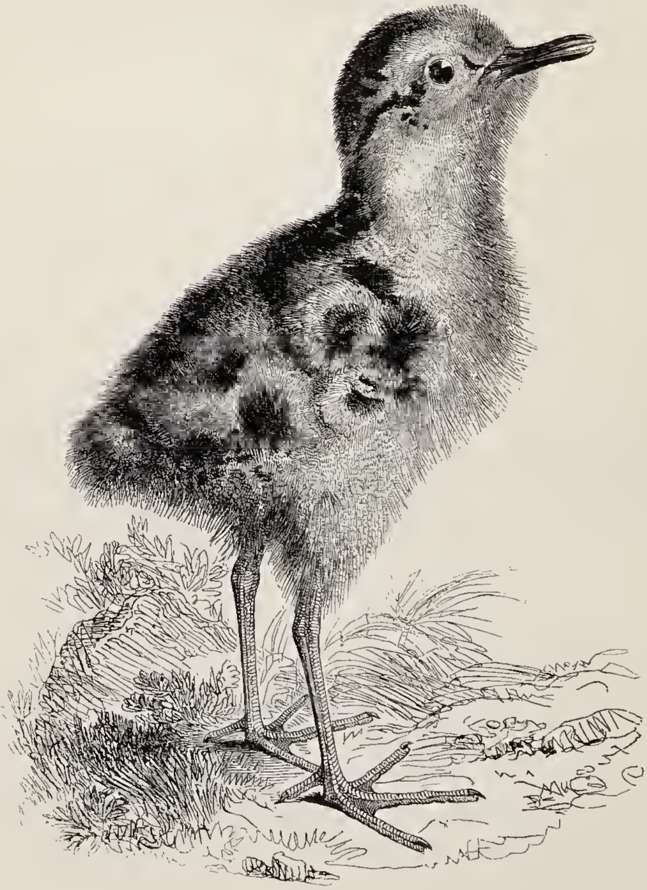
The plumage of the male and female is very similar. The beak is dark brown, except the basal portion of the under mandible, which is pale brown; the irides dark brown; head and neck pale brown, the centre of each feather bearing a longitudinal streak of dark brown; the feathers on the upper part of the back brownish-black, with pale brown edges; the lower part of the back and the rump white; upper tail-coverts white, with a lanceolate streak of dark brown towards the end; tail-feathers barred with dark brown and dull white; the smaller wing-coverts blackish-brown with almost white edges, making this part of the wings appear lighter in colour than the back; the greater wing-coverts and the first five primary quill-feathers black, the latter with white shafts; the secondary wing-feathers and the tertials blackish-brown in the centre, and barred transversely on the edges with dark and light brown; axillaries white, more or less barred with brown; the chin white; front of the neck and upper part of the breast pale brown, streaked longitudinally with dark brown; lower part of the breast nearly white, and spotted rather than streaked with dark brown; vent and under tail-coverts white, the latter with an occasional dusky streak; legs and toes pale blue, becoming lead-blue a few days after death.

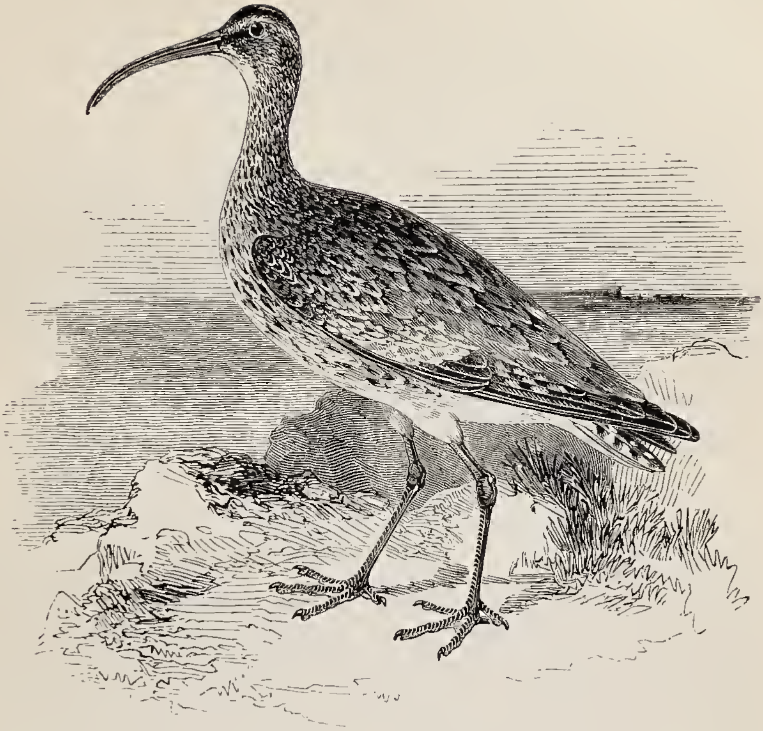
In the young of the year the under parts are washed with pale rufous, and the brown lineations are less defined, and the spots are cream-coloured. During August and September, when the old birds are moulting their quill-feathers and unable to fly well, the young birds are strong on the wing: in fact, early-bred birds can fly by the end of June. They begin to get their first feathers replaced by more ash-coloured ones towards the end of September, and this moult extends over the back and breast before the winter.

The females are the larger, and, in a pair of Curlews now under consideration, remarkably so: the female measured twenty-six inches; the wing twelve inches and one-quarter: the male in the whole length twenty-one inches, the wing eleven inches and a half. A female weighs about 28 oz.

Several albinos of this species are on record; there is one in the Museum of Science and Art, Dublin; one is in a private collection in Armagh; and Mr. J. Marshall of Taunton has a creamy white example captured on the 2nd of August last (Zool. 1883, p. 377). Melanisms are rarer: Sir R. Payne-Gallwey states that he has one killed in Galway Bay in 1877, and sold as a Glossy Ibis.

The vignette represents the young of the Curlew, for the opportunity of figuring which the Author was indebted to the late Mr. T. C. Heysham, of Carlisle. The down is buff-coloured, with dark brown markings.





NUMENIUS PHÆOPUS (Linnæus*).

THE WHIMBREL.

Numenius phæopus.

In its plumage, its haunts, habits, and food, the Whimbrel very closely resembles the Curlew last described, but is by no means so numerous as a species, and is also very considerably smaller in size,—so much so, that it has in some counties obtained the names of Half-Curlew and Jack-Curlew in reference to its diminished comparative proportions. Though to be seen occasionally on many parts of our shores in winter, it is generally most plentiful in May: so much so that both in Norfolk and in Cornwall it is known as the "May-bird": and again in autumn, when these birds are on their way to and from the northern localities, to which they resort during the breeding-season.

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* *Scolopax Phæopus,* Linnæus, Syst. Nat. Ed. 12, i. p. 243 (1766).

Some non-breeding individuals remain on the mud-flats throughout the summer, but even those which have gone north do not tarry long, and by the latter part of July the return migration has set in. At this season, says Mr. Cordeaux, and also Mr. Hele, the birds pass at an immense height, and are only to be distinguished by their call-note. Unlike the Curlew, they seldom or never strike the lanterns of light-houses. The young birds arrive first; the old ones, as a rule, afterwards, owing to the delay caused by their moult.

In Ireland, where the Whimbrel is more abundant in the spring than in the autumn migration, none have ever been known to breed, nor does there appear to be any well-authenticated instance of the nesting of this species on the mainland of Scotland. It is not even known to nest in the Hebrides, although it passes through them in spring; but in the Orkneys it breeds regularly, and also in the Shetlands. The Editor observed a pair on Noss, which evidently had young very near; and Saxby says that on Yell and Hascosea it still breeds almost as abundantly as at the time of Hewitson's visit. It leaves as soon as breeding is over.

In the Færoes, where, as already observed, it replaces the Curlew as a breeding species, the Whimbrel is very common from the middle of April to the end of September, and from the 25th of May onwards Major Feilden obtained twelve nests, each with four eggs. On the 16th June he found a nest, also with four eggs, close to a rill, between two blocks of stone, which just gave room for the bird to squeeze between. This experience is interesting, as Hewitson was under the impression that the complement of eggs was three. The nest is a mere depression, and the eggs, which average 2·4 by 1·55 in., are pear-shaped, of a peculiarly transparent olive-green blotched and flecked with brown. The Whimbrel is a pugnacious bird, and the Editor has seen it fearlessly attack Richardson's Skua in the same way as Major Feilden described it as driving off the Lesser Black-backed Gulls, uttering its trilling cry, *tetty, tetty, tetty tet,* whilst darting to and fro with arrow-like flight. Its food consists of insects, worms, small crustaceans, and small land-shells, such as *Helix ericetorum,* for it is much more of a land-feeder during its visits to our islands than the Curlew, and it is said to be partial to bilberries.

The Whimbrel has occurred as a straggler in various parts of Greenland, and in Iceland it is one of the most characteristic breeding species. In Norway its summer range extends to the north of the fells, and in Sweden to the limits of pine-growth ; it is a common breeding species in Northern Russia, and also on the lofty plains of the Ural much further south. Over the rest of Europe and along the Mediterranean it is only known as a migrant, and, touching at the Canaries, Madeira, and the Azores, it goes down the west coast of Africa to the Cape in winter. It occurs on the east side of that continent, as also in Madagascar, Mauritius, and other islands of the Indian Ocean ; is abundant about Kurachee in winter, and visits other parts of India and Ceylon in moderate numbers. To the north its summer range extends across Siberia to Kamtschatka, and if a doubtfully distinct form—*N. variegatus,* Scopoli (*N. uropygialis,* Gould), which has the rump barred instead of white—is united with it, then its range extends to Japan, China, Formosa, the Philippines, and the islands of the Eastern Archipelago down to New Guinea. In America our Whimbrel is represented by *N. hudsonicus,* with rufous axillaries—a species which has been known to straggle to the south-west of Spain (Ibis, 1873, p. 98). In Southern Europe and Northern Africa is found *N. tenuirostris,* a species of the size of the Whimbrel, but with the very distinct head-markings of the Curlew, and white under wing-coverts and axillaries.

The Whimbrel appears to have been designated by the name of ‘ Spowe ’ in the L’Estrange Accounts, a term which corresponds with the ‘ spói,’ ‘ spou,’ ‘ spof ’ and ‘ spove,’ of Iceland, Norway, Sweden and Denmark (Stevenson, ‘ B. Norfolk,’ ii. p. 202). But by the time of Willughby, it appears to have been generally known under its present name. In Sussex it goes by the name of 'Titterel,' owing to its note, and for the same reason Whimbrels are often spoken of in the south and west as 'the Seven Whistlers,' the rippling whistle being repeated seven times.

In the adult in spring the beak is brownish-black, pale brown at the base of the under mandible; the irides dark brown; the top of the head dark brown, with a buff streak passing backwards over the top to the occiput; from the angle of the gape to the eye a mottled brown streak; over that, and passing in continuation over the eye and the ear-coverts, is a light-coloured streak; the feathers of the neck, all round, brownish-white with dark central streaks; inter-scapulars, scapulars, and wing-coverts, dusky-brown, with paler margins; wing-primaries dark brown, the outer ones distinctly marked with white notches on both upper and under side of the inner webs; the secondaries mottled with white; rump white with a few streaks of brown; tail-feathers ash-brown with four or five well-defined darker transverse bars; chin white; chest pale brown, each feather with a dark brown central streak; breast and belly nearly white; axillary plumes white, with broad and somewhat arrow-headed bars of brown; flanks dull white, barred transversely with brown; under tail-coverts nearly white, with brown longitudinal streaks; legs and toes bluish-black; claws black.

In a young bird shot in Somersetshire on the 17th September, and sent to the Editor by Mr. Cecil Smith, the edges of the feathers of the back are spotted with buffy-white, and on the wing-coverts and secondaries this colour is so pronounced as to take the form of bars, thus producing a remarkably checquered appearance, whence its local name of 'checquer-bird.' The upper primaries are boldly margined and notched with dull white, but the inner webs of the larger quill-feathers are merely freckled with black and white, and not distinctly notched as in the adult. The bars to the axillary plumes are narrower and less extensive; the tail-feathers are more buff-coloured, and the dark bars are more defined and numerous than in the old birds.

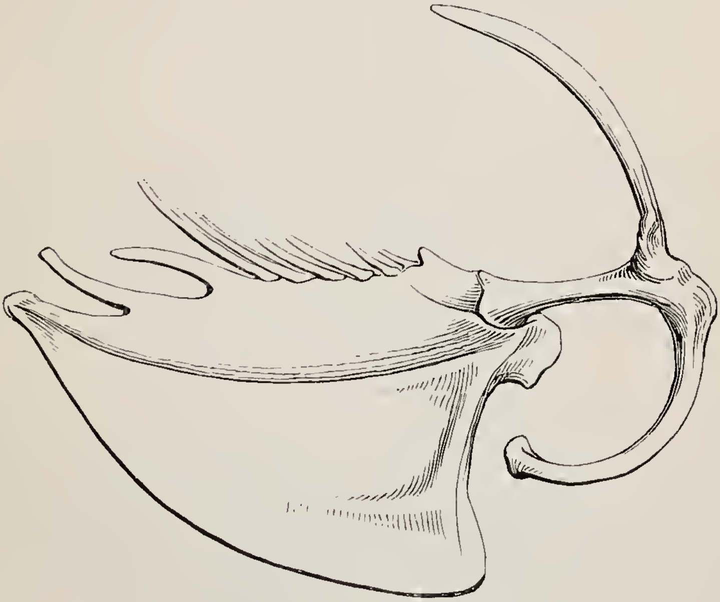
The female from which the representation was taken measured eighteen inches; the beak, from the point to the commencement of the feathers on the top, three inches and a half. The average weight is about twelve ounces.

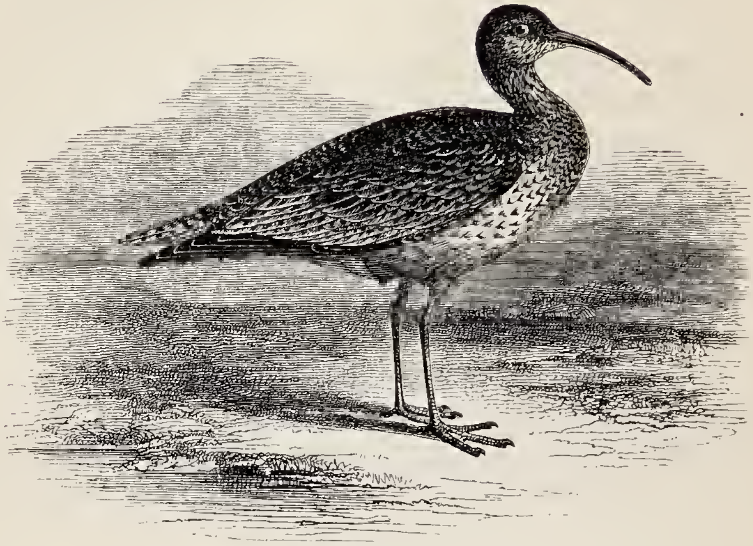
An adult male measured sixteen inches; the beak three inches; the wing, from the carpal joint to the end of the longest primary quill-feather, nine inches and a half; the first quill-feather the longest in the wing.

In young birds of the year the beak is shorter, but by the middle of September it has nearly attained its full length; exceeding two inches in length; the sexes, whether old or young, do not differ much either in tints or markings.

The nestling may be distinguished from the young Curlew by the light-coloured centre which afterwards becomes a broad streak dividing the dark patch on the crown.

The figure below represents the breast-bone of the Curlew, one-third less than the natural size.





NUMENIUS BOREALIS (J. R. Forster*).

ESKIMO CURLEW.

Numenius borealis.

A COMMUNICATION to the Linnean Society of London in November, 1855, announced the first recorded occurrence of this American Curlew in Britain. This bird was killed on the 6th September, 1855, in the parish of Durris, Kincardineshire, at the top of a hill on the muir, belonging to Durris, called Car-monearn, one of the Grampian range, some twelve hundred feet above sea-level, by Mr. W. R. Cussack Smith. The bird was sent to be preserved by Mr. Mitchell, Aberdeen, and was examined a few days after by Mr. J. Longmuir, jun., who ascertained it to be the Eskimo Curlew (*Numenius borealis*). Unluckily it was not measured when in the flesh, and the sex was not observed; but it appeared to be a female, in almost complete winter livery.

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* *Scolopax borealis*, J. R. Forster, Phil. Trans. lxii. pp. 411, 431 (1772). Wilson's *Scolopax borealis* is the American Whimbrel (*N. hudsonicus*).

Mr. N. F. Hele, in his 'Notes about Aldeburgh' (p. 177), published in 1870, states that "an example of the species was killed some years since, on the river [Alde, in Suffolk], by Captain Ferrand, but was, unfortunately, not preserved. One in the possession of Mr. Hilling, of Woodbridge, in very similar dress, was obtained in the river in that neighbourhood." These two are the only occurrences recorded in England.

In Ireland one, shot in Sligo, was purchased in the flesh in Dublin market on the 21st October, 1870 (Zool. ss. p. 2408), and became the property of Sir Victor Brooke, Bart., who exhibited it at a meeting of the Zoological Society (P.Z.S. 1871, p. 299).

On the 29th of September, 1879, another example of this rare straggler was shot in Aberdeenshire, by Mr. Ramsay, of Staines, and exhibited by Mr. J. A. Harvie-Brown, at the meeting of the Natural History Society of Glasgow on the 26th of November. Mr. G. Sim, of Aberdeen, to whom the bird was sent for preservation, stated that the bird was a male, weighing eight ounces, and that its stomach contained crowberries, some flies, and a caterpillar (Zool. 1879, p. 135). On the 21st September, 1880, an adult male shot in the Forest of Birse, Kincardineshire, was sent to the same taxidermist, and its stomach was found to contain crowberries (Zool. 1880, pp. 485 and 515).

From Richardson, Audubon, Dr. Elliott Coues and others, we learn that the Eskimo Curlew is found in summer in the North American regions within the Arctic circle. The former discovered a nest with three eggs near Point Lake on the 13th June, 1822, and the late Mr. MacFarlane, when collecting for the Smithsonian Institution, found the bird breeding in considerable numbers to the east of the Anderson River. Mr. E. W. Nelson states (Cruise of the 'Corwin,' p. 90) that it occurs in summer abundantly at Norton Sound, and sparingly at the mouth of the Yukon, frequenting the whole of the low-lying coast of Alaska on migration, and visiting the Pribilov Islands ; on the North Siberian coast four specimens of this—the only species of Curlew seen—

were observed at Cape Wankarem on the 6th of August, 1881; but the representative of this species in the rest of Siberia, Japan, China, the Moluccas and Australia, is the smaller and quite distinct *Numenius minor*.

Reinhardt says that two specimens of the Eskimo Curlew, believed to be of Greenland origin, have been received at Copenhagen; and undoubted Greenland examples were obtained in August 1881 (Vid. Medd. 1881, p. 185). In Labrador the species is found in vast numbers in August, feeding upon the crowberry (*Empetrum nigrum*), which goes by the name of the 'Curlew-berry' among the fishermen. It also visits Newfoundland, but comparatively few birds appear to remain long in the New England States, or to the north of the Southern States and Texas where some winter, whilst others continue their course to Mexico, the Bermudas, Central America, and South America down to the Rio de la Plata. On the spring passage it migrates through the Missouri region in flocks of from fifty to several hundreds in April, sometimes before the snow has disappeared, but it is not known to visit the western side of the Rocky Mountains.

The nest of the Eskimo Curlew is said by Dr. Elliott Coues to be generally in an open plain, and is a mere depression in the ground, lined with a few dried leaves or grasses, in which the complement of four eggs is deposited by the middle of June. These are of an olive-drab colour, boldly blotched with different shades of brown, and underlying shell-marks of grey: in measurement they average 2 by 1·45 in. An example, obtained by MacFarlane, is figured by Professor Newton (P.Z.S. 1870, p. 56, pl. iv. fig. 1).

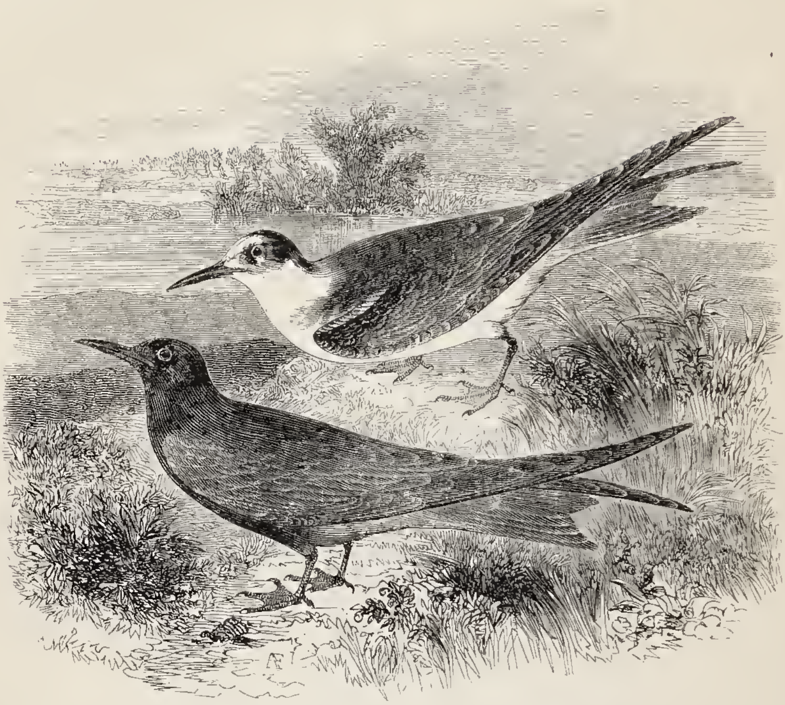
In autumn this species, as already stated, feeds freely on the crowberry, with the purple juice of which the lower parts are frequently much stained; it is also very partial to a species of snail that adheres to the rocks, to procure which it frequents the land-washes at low tide. Under this diet the birds become excessively fat, and are delicious eating. The note is an often-repeated soft, mellow whistle, easily imitated by gunners, but owing to the open order of the flocks comparatively few are killed at a shot; the flight is firm, direct, and very swift. The pertinacity with which these birds cling to certain feeding-grounds, even when much molested, is remarkable, and Dr. Elliott Coues has seen flocks hovering distractedly over a party of gunners stationed on a favourite mud-flat where snails abounded, regardless of the numbers that fell at every moment (B. of North-West, p. 511).

The bird killed in Kincardineshire is thus described in 'The Naturalist,' 1855 (p. 265):—The bill is brownish-black, the basal portion of the lower mandible flesh-coloured; irides dark brown; sides of the head yellowish-brown, with brown streaks; upper part of the head brownish-black, edged with reddish-brown, neck considerably lighter, edged with dull white; upper parts blackish-brown, with light edges; primary quills dusky-brown, the shafts of the first four white, the others becoming darker, passing into pale brown; secondaries lighter; rump dark brown, with light edges; upper tail-coverts barred with dark and light shades; tail, of twelve feathers, ash-grey, with dark brown bars, edged and tipped with brownish-white; throat, and a streak over the eye, nearly white; foreneck light brown, with small longitudinal liver-brown markings; under wing-coverts chestnut, with irregular brown markings; breast and abdomen yellowish-grey, tinged with brown; tarsi and feet dark green. The adult in breeding-plumage is characterized by a more rufous tint.

The whole length is about fourteen inches; the bill two inches three lines; wing, from anterior bend, eight inches nine lines; tarsus one inch ten lines; middle toe almost one inch.

The representation here given is taken, on a reduced scale, from Mr. Swainson's figure in the 'Fauna Boreali-Americana.'

GAVIÆ. LARIDÆ.



HYDROCHELIDON NIGRA (Linnæus*).

THE BLACK TERN.

Sterna fissipes.

HYDROCHELIDON, *Boie*†.—Bill about as long as the head, nearly straight, tapering ; nasal groove rather long ; nostrils basal, direct, oblong. Wings long and pointed, the first quill-feather the longest. Tail short, very slightly forked. Legs short : the tibia bare for some distance ; the tarsus compressed, anteriorly scutellate ; three toes in front connected by deeply scalloped webs ; hind toe small and elevated ; claws long, slender, curved.

THE relationship of the order GAVIÆ to the LIMICOLÆ is now generally, although somewhat tardily, admitted. The Terns and Gulls comprised in the former order, show the gradual modifications consequent upon a more or less aquatic or pelagic existence, whilst, in an opposite direction, the Waders have undergone modifications in accordance with terrestrial tendencies. The order GAVIÆ consists of the family *Laridæ*, which may be divided into four sub-families:—*Sterninæ* or Terns; *Rhynchopinæ* or Skimmers (not found in Europe); *Larinæ* or Gulls; and *Stercorariinæ* or Skuas. As nearest to the Waders in their habits, food, and nidification, it seems convenient, in treating of the *Sterninæ*, to commence with the Marsh Terns, belonging to the well-defined genus *Hydrochelidon*. The species comprised in it are three in number, all of them entitled to recognition as British birds, and they are distinguished from most of the other Terns by their shorter bills, short and very slightly forked tails and less webbed feet.

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* *Sterna nigra*, Linnæus, Syst. Nat. Ed. 12, i. p. 227 (1766).

† Isis, 1822, p. 563.

THE BLACK TERN, of which we have figured an old male in summer dress, and a young bird of the year, is now only a visitor to the British Islands on the spring and autumn migrations; but in former times, before drainage had broken up its favourite haunts, it was an abundant species in many localities during the breeding-season. When Montagu wrote, early in the present century, it used to breed in Romney Marsh in Kent, but it has long ceased to do so, and in the south of England it is only known as a migrant: sometimes, as in Somersetshire, in tolerable abundance. Receding before the gradual drainage of the fens, it had for some years discontinued breeding in the Feltwell and Hockwold districts in the south-west of Norfolk, but Mr. Stevenson says, that after the great flood of 1852–53, which inundated a large extent of country, several pairs remained to nest in 1853, although they did not return the following year. He adds that the last nest he knew of in Norfolk was found at Sutton in 1858, when the two birds were shot by a marshman, who brought them with two eggs to a bird-stuffer in Norwich, from whom Mr. Stevenson obtained them.* In 1818 it nested abundantly in the 'broad' district, but the late Rev. R. Lubbock subsequently wrote to the Author as follows:—"The Black Tern used to breed in Norfolk in abundance, but that the great breeding-place in a wet alder carr at Upton, where twenty years back hundreds upon hundreds of nests might be found at the end of May, has been broken up for some years. The Blue Darr, as it is provincially termed here, has in consequence become scarce. Mr. Salmon told me that he got the eggs of this bird from Crowland Wash, in Lincolnshire, within the last two or three years. It can hardly be said at present to breed regularly in Norfolk, a few straggling pairs only still nest here." The breeding-places in Lincolnshire have also disappeared before modern improvements, and of late years only a pair or two have been known to nest sporadically in localities which it is not necessary to expose to the exterminating greed of the collector of purely 'British-taken' birds and eggs. As a migrant it is not uncommon on the Humber and on some parts of the Yorkshire coast, but northwards its visits are comparatively rare. In Scotland it can only be considered a straggler, principally, according to Mr. R. Gray, to the east coast from Berwick to Aberdeen, although he has known it to occur on the lochs and sea-reaches of the west, and on Loch Lomond. A solitary example is recorded by Saxby as having been noticed many years ago in Shetland, but it is not known to have visited Orkney. To the marshes of the Solway it is a visitant, but does not appear to have bred there, and along the western side of the island it is not very frequently observed. Being a fresh-water species, it is from time to time observed on many inland sheets of water, and on rivers; in fact, it may annually be observed on the upper reaches of the Thames, which seem to lie in the direct line of its migrations. An adult bird has sometimes been seen in July, but as a rule the immature migrants begin to pass early in August, leaving by October: occasionally remaining in the south-west until November. In April the return-passage commences, the adult birds being then more or less in the nuptial plumage.

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* Note 162 in Lubbock's 'Fauna of Norfolk,' Ed. 1879, p. 169.

In Ireland the Black Tern is of irregular occurrence, chiefly in autumn, and in immature plumage; on the west side it is very rare, and Mr. Warren has only once observed a small party in the estuary of the Moy; nevertheless, many of the bogs and loughs would appear eminently suitable as breeding-places.

The Black Tern does not appear to go very far north even in summer, but it is of tolerably general diffusion during the breeding-season throughout the southern portions of Sweden, temperate and southern Russia, Denmark, Germany, Holland, and the rest of Europe, where the localities are suitable. It breeds in marshy localities on both sides of the Mediterranean; but its winter range is scarcely known to extend beyond North Africa, Egypt, and Palestine. The exception is a single specimen, in the Editor's collection, obtained on the 4th January, 1871, at the Cameroons, on the west coast of Africa; but all the examples from Damara Land on the one side or the Transvaal on the other, recorded as *H. nigra*, have proved to be the White-winged Black Tern, *H. leucoptera*. Eastwards, it is stated, by Dr. Severtzoff, that the Black Tern breeds in Turkestan, and Dr. Finsch obtained it on the Marakul Lake, at an elevation of 5,000 feet, in the Altai; but the former does not record it from the Pamir Steppes, and the only species of the genus observed at Gilgit by Dr. Scully (Ibis, 1881, p. 594) was the Whiskered Tern, *H. hybrida*. As yet there is no record of the occurrence of the Black Tern in India or in China.

In North America, from Canada down to the Middle States, in summer, is found a Tern which is, as a rule, of a deeper and *browner* black on the under parts than any European examples which the Editor has examined, so that American skins can generally be recognized at a glance; but it must be admitted that *some* American birds cannot be distinguished by this tint, and such a mere shade of colour appears to be insufficient to warrant specific separation. This form stretches across to the Pacific coast; its migrations extending to the West Indies and Guiana on the east side, and to Peru and Chili on the west.

The Black Tern breeds in colonies, the nests being situated in marshes, and formed of decayed pieces of *Equisetum* and other plants, or heaps of wrack, which rise and fall with the water; sometimes they are placed on the firmer hummocks of bog in the middle of shallow pools. The eggs are three in number, of various shades of ochreous clay, olive-brown, or olive-green, blotched with dark brown, especially at the larger end, and measuring about 1·45 by 1 in.; they are laid about the third week in May. The food of this Tern consists chiefly of beetles and dragon-flies, with some small fish; it is also very partial to leeches; and Mr. Mitchell (Zool. 1879, p. 10) has described its rapid evolution in pursuit of the field cricket (*Acheta campestris*). The insect portion of its prey is taken on the wing with great ease and certainty, as the flight of the bird is rapid, and it turns, stops, or alters its course, in an instant. The note is a shrill *crick, crick;* and Pennant says that in the Lincolnshire colonies the noise of the assembled multitude was deafening. The bird was provincially known as the 'Car Swallow.'

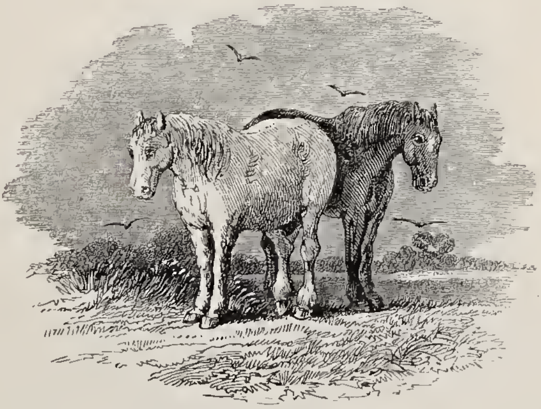
Adult males and females in summer have the bill black; the irides dark brown; whole head and neck dark lead-grey, nearly black on the crown and nape; back, wings, and tail nearly uniform slate-grey, inclining to white on the carpals; breast and belly, like the head and neck, dark lead-grey; under wing-coverts pale grey; vent and under tail-coverts white; legs, toes, and their short membranes dark reddish-brown; the tail distinctly, although not deeply, forked, the outer feathers on each side being the longest. The whole length of the bird ten inches; the wing, from the carpal joint to the end of the first quill-feather, eight inches and a half.

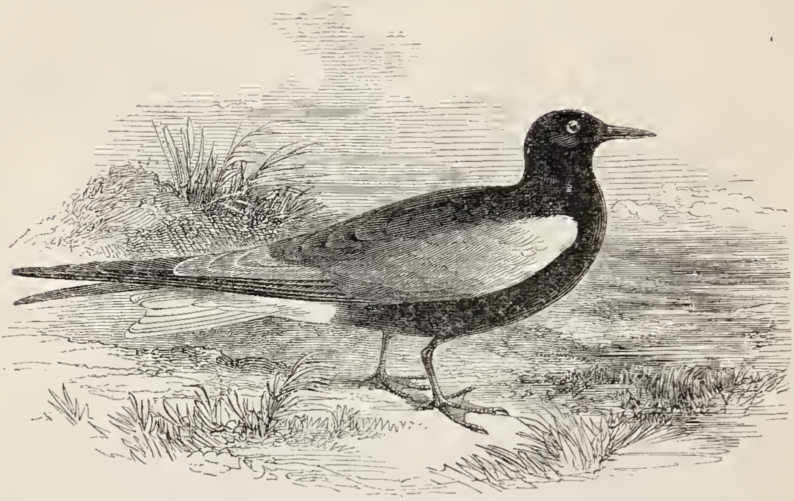
Adult birds in winter have the forehead, the space between the beak and the eye, the chin, and throat, white; the breast, and to some extent the abdomen, being barred with whitish feathers, although the lower parts do not appear to become quite white as in the young. The other parts as in summer.

Young birds of the year have the bill brownish-black; forehead, chin, throat, and a collar round the neck, white; crown of the head and the nape greyish-black; feathers of the back and wing-coverts light slate-grey, margined with brown and white; primaries dark slate-grey; rump and upper tail-coverts pale grey; tail-feathers slate-grey, the outside feathers on each side shorter and more rounded than in the adult; breast, belly, and all the under surface of the body and wings white. An example killed at Málaga on the 2nd of August had the breast and under parts suffused with a rosy tint.

Before leaving this country the plumage on the upper surface of the body in the young bird loses the brown colour, becoming of a more uniform slate-grey, but clouded with dark lead-grey. By the following spring few signs of immaturity remain excepting a darkish line along the carpals; and at that season some dark feathers are assumed on the under parts, but the full nuptial dress is not acquired until the second spring, when the bird is ready to breed. The degree of darkness on the under parts depends upon the age of the individual.

In the nestling the down of the upper parts is of a warm reddish-buff; forehead ruddy-brown; crown, back, and shoulders streaked with black; a small white spot on the chin; throat, and lower part of cheeks, sooty-brown; rest of the lower parts brownish-buff in the newly-hatched bird, afterwards white, inclining to buff on the flanks.





Hydrochelidon leucoptera (Schinz*).

THE WHITE-WINGED BLACK TERN.

Sterna leucoptera.

The first notice of the occurrence of this handsome straggler to the British Islands was published by Mr. Frederick M'Coy (Annals Nat. Hist. xv. p. 271), who stated that a specimen was shot by Mr. J. Hill on the Shannon in 1841; but the latter, writing to 'Saunders's Newsletter,' April 14th, 1847, said that he killed the bird on the river Liffey, near the Pigeon-house Fort, Dublin Bay, in October, 1841. Thompson says (B. of Ireland, iii. p. 307), that he has seen another specimen killed near the same locality, and which came into the possession of Mr. Watters of Dublin. Next in order of date is one shot by the keeper of Mr. R. Rising, in whose collection it now is, at Horsey Mere, Norfolk, on the 17th May, 1853 (Zool. p. 3911); and Gould states (B. of Gt. Brit. v.), on the authority of Mr. N. Troughton, that two were obtained near Coventry in June, 1857. Mr. W. E. Clarke states (Hbk. Yorks. Vertebs. p. 80), that one shot at Scarborough in 1860 is in the collection of Mr. E. Tindall; and in the spring of 1867, according to Mr. Cordeaux (B. Humber, p. 197), a single mature bird was observed but not obtained near Flamborough Head. An adult bird is mentioned by Mr. Hancock as acquired by him from the collection of Mr. Oxley, of Redcar, in April 1871, and shot on the 15th May (year unknown), at Port Clarence, Teesmouth (N. H. Tr. Northumb. & Durh. p. 143). On the 27th June, 1867, as recorded by Mr. Stevenson (Zool. s.s. p. 951), one now in his collection was obtained on Hickling Broad, Norfolk; on the 26th May, 1871, two males and two females were shot out of a flock of five on Breydon Water, near Yarmouth (Zool. s.s. p. 2830); on the 30th May, 1873, six were killed out of a number which were frequenting Hickling Broad (Zool. s.s. p. 3712); and on the 10th June, 1883, one of a pair was shot in the same locality.

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* *Sterna leucoptera*, Schinz, in Meisner & Schinz's Vög. Schweiz, p. 264 (1815).

A specimen in a very interesting state of change from summer to winter plumage is in the collection of Mr. Westlake of Ilfracombe, North Devon, shot there early in November, 1870. Mr. Hart of Christchurch informs the Editor that many have been seen in May and June on the Hampshire and Dorset coasts, one of them being in the collection of Sir John H. Crewe, Bart., of Calke Abbey, Derby. Mr. A. J. Clark Kennedy records ('The Field,' June 19th, 1875) one killed some few years previously, near Eastbourne; and Mr. Colgate states ('The Field,' 13th June, 1875) that one was obtained near Newhaven, about May, 1873. In 'The Field,' 5th June, 1875, Mr. Williams, taxidermist, of Dublin, states that a bird shot near Limerick had recently been sent to him for preservation; and a specimen presented by Mr. R. J. Ussher, of Cappagh, co. Waterford, to the Dublin Museum of Science and Art, was killed by his keeper on the 13th May of the same year. At Scilly a specimen was obtained in May or June, 1882, as recorded by Mr. Thomas Cornish (Zool. 1882, p. 235). It will be remarked that, with the exception of the first Irish and the Ilfracombe examples, every specimen of which the date of capture is known, has been obtained on the vernal migration in May and June.

The White-winged Black Tern is a very rare bird in Northern Europe, and even in the south of Sweden only one specimen, obtained near Lund on the 1st June, 1835, is recorded by Nilsson.* It is almost equally uncommon in Northern Germany and Belgium, and it is an accidental visitor to the northern portions of France, but along the Rhone valley, in Savoy, and in the Camargue, it is of regular occurrence. On migration it is common along the east coast of Spain, but a rare and irregular straggler so far west as the marshes of the Guadalquivir. In Italy it is principally observed on the spring migration, and it probably breeds in Sicily and Sardinia, but in the smaller islands of the Mediterranean it is merely a migrant. In some parts of Southern Germany, and on the Neusiedler lake and other localities in Hungary, it is known to breed; it nests in limited numbers on the lakes near Lublin in the south of Poland, and abundantly in the marshes of Polesia; also throughout Southern Russia to the Volga and the Caspian. Very rare so far west as Tangier in Morocco, it is said to breed in Algeria; also in the Delta of the Nile, and for some distance up that river, visiting Abyssinia and the Red Sea on migration. In winter it occurs in flocks on the marshes and 'vleys' of the Transvaal, and Andersson found it common in similar localities in Damara Land; it has also been recorded from the Gambia. In Asia its breeding-range extends from the Caspian, across Southern Siberia, to Mongolia, Northern China, and the Amoor; and Pallas states that this species visits Kamtschatka. Swinhoe obtained it in Southern China, and on the island of Formosa; it visits the Philippines, Borneo, Celebes, and the Eastern Archipelago, Burmah and Ceylon, and it has once been obtained (Ibis, 1870, p. 436), in full plumage, at Tipperah, in Eastern Bengal. Mr. Buller says, but without adducing any evidence, that this Tern has been found in Australia; and he states (B. New Zealand, p. 287) that two in full summer plumage were shot when associating with a large breeding colony of *Sterna frontalis*, in the Province of Nelson, New Zealand, on the 12th of December, 1868.

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* The late Mr. G. R. Gray erroneously identified with this species the *Sterna nigra* which Linnæus describes as "found on the small reedy islands about Upsala." His unfortunate example has been too widely followed, and has occasioned much confusion.

In North America an isolated occurrence is on record. An adult female in summer plumage was obtained on Lake Koskonong, Wisconsin, July 5th, 1873, by Mr. T. Kumlien, and presented to the Smithsonian Institution by the late Dr. T. M. Brewer.

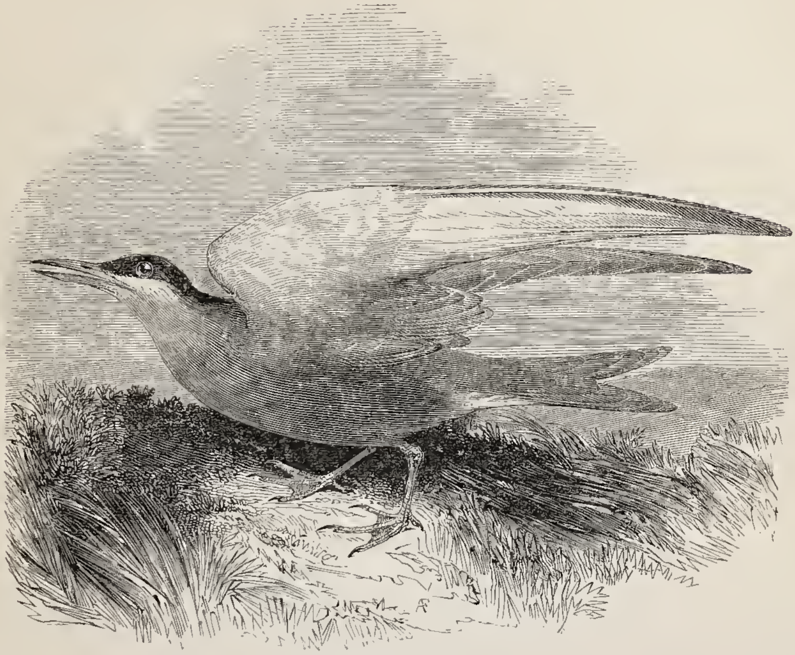
The White-winged Black Tern nests in marshes; sometimes in company with the Black Tern, where, as in Central Europe, the latter preponderates, but, in large colonies of its own in South-eastern Russia and Siberia, where it is the dominant species. Its eggs, deposited on the floating vegetation in May and June, are usually three in number, of an olivaceous-buff, boldly blotched and streaked with dark brown, and spotted with grey of different shades; average measurements about 1·35 by 1 in. In its flight it is more rapid than the Black Tern, and it is said to have a louder and harsher voice than that species. Its food consists of dragon-flies, water-insects and their larvæ.

An adult male in summer plumage has the beak livid red; the irides hair-brown; the head, neck, and upper part of the back, glossy-greenish-black, the feathers becoming lighter in colour towards the rump; upper tail-coverts and tail-feathers white; anterior portion of the outside of the wing white, passing into a light grey on the larger wing-coverts; primary wing-feathers frosted with grey, which wears off, leaving the webs, especially those of the outer ones, sooty-black; a long triangular streak of white starting from the base of the broad inner web; shafts white; the secondaries grey; tertials and the scapulars slate-grey. The chin, neck in front, breast, belly, sides, and flanks, black; under wing-coverts black; under tail-coverts, and under surface of the tail-feathers, white; legs, toes, and their membranes orange-red; the claws black; the interdigital membranes very much indented.

The whole length nine inches and a half; the wing, from the carpal joint to the end of the first primary, eight inches and a quarter.

In the autumn moult the black portions of the plumage become white on the head, neck and under parts, and slate-grey on the mantle; a specimen in the Editor's collection, obtained near Valencia, in Spain, on the 25th of July, presents a remarkably piebald appearance. Some black is never absent from the nape and ear-coverts, and in mature and vigorous birds the black of the under parts soon begins to make its reappearance. The immature bird in August has the bill livid brown, lores and forehead white, crown and nape brownish-grey, a dark streak behind the ear-coverts; sides of the neck white, tinted with buff; upper back and scapulars slate-grey, tipped or overlaid with brown, which gradually wears off; back grey, mottled with brown, rump white, passing to grey on the tail-coverts; tail-feathers grey, darker and browner at tips; primaries darker on inner webs than in the adults; under wing-coverts and under parts white. By the end of the following summer the brown tips have completely passed away, leaving only a mottled bar along the carpals to indicate immaturity; and in the following spring, when the bird is nearly two years old, it assumes the black nuptial garb. The tail-feathers, however, do not become quite white for some years, and it may be that this takes longer with the females than with the males; otherwise there appear to be no appreciable external differences between the sexes when fully matured. The nestling is of a nearly uniform rufous-buff, slightly darker on the throat; the crown and back streaked and mottled with blackish-brown.

The young of this species may be distinguished from that of *H. nigra* by its longer feet, with much more deeply incised webs; paler rump and tail,—the latter being also less pointedly forked—; the distinct white interior of the inner webs of the outerprimaries, and the pure white—not grey—of the under wing-coverts. But the young of the White-winged Black Tern are not always to be so easily distinguished from small Asiatic examples of the Whiskered Tern, *H. hybrida*, which will next be considered, although in European examples of each species the superior dimensions of the latter are a sufficient indication.



HYDROCHELIDON HYBRIDA (Pallas*).

THE WHISKERED TERN.

Sterna leucopareia.

THE earliest discovery of the occurrence in the British Islands of this straggler from the south, was made by the late Mr. T. C. Heysham, of Carlisle. At the end of August, 1836, a party of two or three persons went out in a boat from Lyme, to amuse themselves in shooting sea-birds, and this Tern, among others, was part of the produce of their guns. Mr. Heysham shortly afterwards having an opportunity of examining the skins of the birds obtained, selected that of the Whiskered Tern here figured, and made the arrangement by which the Author became possessed of it.

In September, 1839, a second example was obtained at the mouth of the river Liffey, Dublin Bay, by Mr. John Hill, who shot the White-winged Black Tern already noticed, and this specimen having passed into the collection of Mr. T. W. Warren of Dublin, was recorded by Thompson (Ann. Nat. Hist. xx. p. 170) in 1847; it is now in the Museum of Science and Art, Dublin. A third, now in the collection of Mr. J. H. Gurney, was shot on Hickling Broad, Norfolk, on the 17th June, 1847. "It proved to be an adult female, and contained ova in an advanced stage; the largest being apparently almost ready to receive the shell. In the stomach were found about twenty of the larvæ of the broad-bodied dragon-fly" (Zool. p. 1820). A fourth, and immature example of this Tern, was procured, as recorded by the late Mr. Rodd (Zool. p. 3280), near Tresco Abbey, Scilly, at the end of August, 1851. Lastly, Mr. J. Gatcombe mentions (Zool. p. 9629) that one was picked up on the water by some fishermen, alive but apparently exhausted, near Plymouth, in May, 1865, and this specimen, which is in full breeding-plumage, he has kindly presented to the Editor.

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* *Sterna hybrida*, Pallas, Zoographia Rosso-Asiatica, ii. p. 338 (1811). The name of *H. leucopareia* (Natterer), which is often applied to it, was not conferred until 1820.

The Whiskered Tern is generally distributed throughout Southern Europe. It does not visit the Baltic, and it is a rare straggler to Northern Germany, and to the northern provinces of France, nor does it appear to migrate along the valley of the Rhone, but it still breeds in the marshes of the Camargue. In suitable situations in the Spanish Peninsula it breeds abundantly; in Italy it is only a visitor on migration; but in Greece, Turkey, and Southern Russia several nesting-places are known. It also breeds sparingly in the marshes of Poland and of Southern Germany; and on the Black Sea it is abundant. In North Africa, from Morocco to Egypt, many breeding colonies are to be found; and in the winter it goes as far south as Damara Land and the Transvaal; indeed, it seems probable that it breeds near some of the elevated lakes of that continent, as Andersson obtained it in full nuptial plumage on Lake Ngami in April. Its breeding-range extends from Asia Minor, through Turkestan, to Mongolia and China, but not to Siberia; and it nests also in Kashmir and Northern India. It occurs in Southern India, Ceylon, the Philippines, and throughout the entire south-east of Asia, and the islands of the Archipelago. On the lagoons of Australia during the breeding-time, ranging to Celebes in the cold season, a form occurs which in the winter plumage is, like some other southern representatives, of a slightly paler tint on the upper parts; but in the breeding-dress the Editor can find no difference between specimens from Queensland and from Europe.

In the British Museum there is a mounted specimen marked as obtained at Barbadoes, and presented by Sir Robert H. Schomburgk, who was for some time Governor of that West-Indian colony; but he does not include it in his list of birds of that island, nor is there any record of the occurrence of this species in America.

The Whiskered Tern breeds in colonies, sometimes in company with the Black Tern. Canon Tristram found that on the large lakes in Algeria the eggs were deposited in the nests of the Eared Grebes, without any repairs to the nests which had just been vacated by the young Grebes. More frequently the nests are composed of tangled weed pulled together on the surface of the water; and the late Mr. A. Anderson, in an interesting account of the nidification of this species in Oudh (Ibis, 1872, p. 82), states that some of the nests he measured ranged from 3½ to 4 feet in circumference, and were about 4 inches thick. They were composed entirely of aquatic plants (some of them 2 feet long), and so interwoven with the growing creepers that it was impossible to remove them without cutting at the foundation of the structure. The eggs, three in number, are usually of a pale green ground-colour—sometimes stone-grey—spotted and blotched with brownish-black and bluish-grey; they measure about 1·55 by 1·15 in. In Europe incubation commences in May, but in India it appears to take place in July.

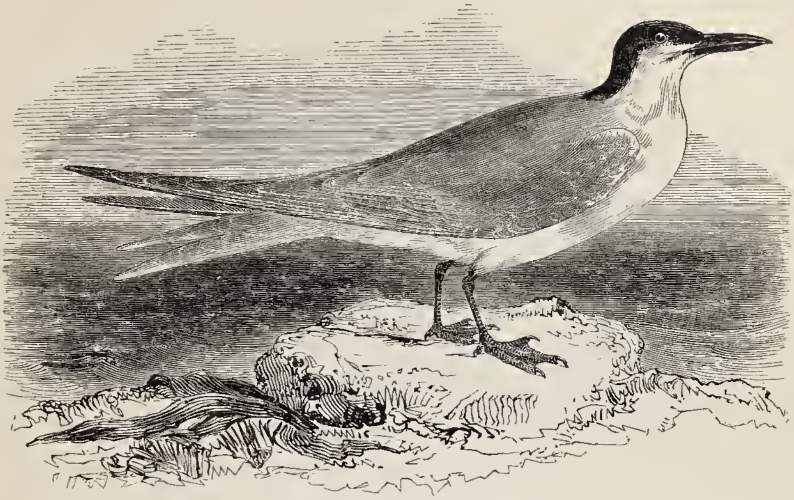
The food of the Whiskered Tern consists of aquatic insects, dragon-flies, leeches, caterpillars, grasshoppers, small newts, fishes, and frogs. The flight is graceful and buoyant, though not swift, but when tired it seldom settles on the water, preferring to alight on fences, stakes, or beds of reeds, or bushes in the swamps. Its cry is somewhat shrill, and not unlike that of the preceding species.

In the adult in summer the bill is blood-red ; the irides dark brown ; forehead, crown, and nape black ; from the base of the upper mandible, in a line below the eye to the ear-coverts a stripe of white, forming the whisker or moustache ; back, wing-coverts, upper tail-coverts and tail-feathers uniform slate-grey ; first quill-feather lead-grey on the outer web, and over a considerable portion of that part of the inner web nearest to the white shaft, the other part of the inner web greyish-white ; the outer webs of the other primary and secondary feathers lighter grey than the inner webs ; chin and throat greyish-white ; neck and breast slate-grey like the back ; abdomen, thighs, and flanks dark lead-grey ; under wing and tail-coverts white ; legs, toes, and membranes red : the membranes deeply indented. Whole length eleven inches and a half ; from the carpal joint of the wing to the end of the first quill-feather, nine inches and a quarter ; length of the tarsus seven-eighths of an inch ; of the middle toe three-quarters of an inch, claw of the middle toe three-eighths of an inch, strong and curved. Indian examples are, on the average, smaller.

Adult birds in winter have the forehead, crown, and all the under parts pure white ; occiput, neck, streaked with black ; a black spot behind the eyes ; mantle, back, wings, tail-coverts and tail-feathers uniform ash-grey ; bill, legs, and feet deep lake-red.

Young birds of the year have the crown of the head, occiput, and ear-coverts greyish-black ; the feathers of the back, scapulars, and secondaries dark brown in the middle, barred and tipped with buff ; tail-feathers grey, darker towards the tips, but margined with white ; beak brown, red at the base ; legs and feet flesh-colour.

The nestling is a clear ruddy-buff above ; a black spot at the base of the upper mandible, followed by a warmer patch of chestnut ; head and back streaked with black ; throat brownish-black ; chest and under parts white. Of the three Marsh Terns it is the most easily recognized.



Sterna anglica, Montagu.*

THE GULL-BILLED TERN.

Sterna anglica.

Sterna, *Brisson*†.—Bill longer than the head; nearly straight, compressed, often slender and tapering, with the edges sharp, and the end pointed; the mandibles of equal length, the upper one slightly decurved. Nostrils near the middle of the beak, pierced longitudinally, pervious. Legs slender, naked for a short space above the tarsal joint; tarsi short. Toes four: the three in front united by intervening membranes concave in front, or semi-palmated; the hind toe free; claws curved. Wings long, pointed, the first quill-feather the longest. Tail distinctly forked in varying degrees.

This species was first made known by Colonel Montagu, who gave a figure and description of it in the Supplement to his Ornithological Dictionary; one specimen was shot by himself in Sussex, and he saw two others that had been killed at Rye. The birds obtained were at first confounded with the Sandwich Tern, but the different form and length of the bill soon led Montagu to a just appreciation of the specific distinctions, and he called the present bird *S. anglica*, because it was not known to him as existing elsewhere.

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[*] Supp. Ornith. Dict. (1813).

[†] Ornithologie, vi. p. 202 (1760).

Montagu's specimen, the type of the species, is now in the British Museum. The next occurrence is one stated by Mr. John Skaife (Charlesworth's Mag. Nat. Hist. ii. p. 530), to have been shot at Blackpool in Lancashire in the summer of 1832. The Author heard of two examples killed in this country, both in 1839; one in Kent, in the month of June, but he mislaid the letter which contained the particulars of the other. One recorded by Mr. H. Denny (Ann. & Mag. N. H. xii. p. 297), was taken near Leeds in the last week of July, 1843, and was noticed at the York meeting of the British Association.

In Norfolk the Gull-billed Tern has been observed more frequently than in any other county. According to Mr. Harting, one shot on Breydon Water, on the 14th April, 1849, is in the Museum of Bury St. Edmunds, and another Norfolk-killed specimen is in the Wisbeach Museum (Hbk. Brit. B. p. 171). Mr. J. H. Gurney mentions an adult male obtained on the 31st July; a male and female on the 1st September, 1849; an adult on the 24th May, 1850; and a male in summer plumage in the early part of July, 1851—all near Yarmouth (Zool. pp. 2569, 2592, 2853, 3235). Returning to the south coast, Mr. A. E. Knox states that there is a specimen in his collection, shot near Rye, and another in the Chichester Museum, killed at Selsea, on the 31st of March, 1852 (Orn. Rambles, p. 253). The late Mr. Rodd says that in a private collection at Penzance there is a Gull-billed Tern presented by the late Rev. Mr. Rice of South Hill, together with a portion of an egg which dropped when he shot the bird near Brighton. On the 14th May, 1872, Baron A. Von Hügel obtained one near Christchurch, Hants (Zool. s.s. p. 3149), which he has presented to the British Museum; and, according to Mr. J. Gatcombe, one was procured near Plymouth in the autumn of 1866 (Zool. s.s. p. 557). About the end of May or beginning of June, 1852, the Rev. John Jenkinson shot an adult near Trescoe Abbey, Scilly (Zool. p. 3536); and on the 11th July, 1872, Mr. Rodd examined a female bird in summer plumage, which was killed at St. Just, near Penzance (Zool. s.s. p. 3188). The ovary in this specimen contained a large bunch of eggs, varying in size from swanshot downwards.

It is not remarkable that this widely-distributed Tern should occasionally visit England, seeing that it still breeds in several localities on the coast and islands belonging to Denmark, although not found to the north of that country. To Germany, the Netherlands, and the north of France it is an accidental visitor, but southwards it breeds in the Camargue, and on the coast of Spain, especially on the sandbanks between Cadiz and the Portuguese frontier. In Central Europe, Italy, and the neighbouring islands of the Mediterranean, it appears to be only a visitor on migration; but it breeds in Greece, Turkey, Southern Russia, on the Caspian, and on the salt lakes of Turkestan; also in Asia Minor, Lower Egypt, and along the coast and lagoons of Northern Africa. It frequents the Upper Nile and the Red Sea, and breeds on several of the islands in the Persian Gulf; also on the lakes of Kashmir; it visits India during the cool season in considerable numbers, and it occurs in Ceylon. Its breeding range extends across the temperate portions of Asia, as Prjevalsky found it breeding in the Hoang-ho valley in the south of Mongolia; and Swinhoe obtained it in winter dress at Amoy in China. Southwards it is found throughout the Eastern Archipelago;* and in Australia, breeding in the inland lagoons, and ranging northwards through the Malay region to Ceylon during the cool season, we meet with a form which, like the southern race of the Whiskered Tern already mentioned, is slightly paler on the upper parts, and which is the *Sterna macrotarsa* of Gould.

In America this species, which was formerly distinguished in the United States as *Sterna aranea*, Wilson, is found on the temperate portions of the east coast, breeding as far as Galveston in Texas, and ranging southwards to Cuba, Brazil, and northern Patagonia. It probably breeds in Brazil, as numerous examples obtained at Santa Catarina are in full nuptial plumage. On the Pacific side Mr. Salvin obtained it in Guatemala.

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* This species is the *Sterna affinis* of Horsfield (1820), found in Java, but not of Rüppell (1826); the latter having applied the name to the Allied Tern, *S. media*, Horsfield (1820).

The Gull-billed Tern breeds in colonies on islands or sandbanks in lagoons, and the nests are merely slight hollows with at times a few bits of seaweed or dry grass for a lining. Mr. Seebohm, who has visited large colonies at Missolonghi and at Smyrna, says that two is the usual number of eggs; frequently three, but never four. Their ground-colour is of a greyish-white or yellow-ochre, occasionally of a pale greenish tint which soon fades, blotched and spotted with different shades of brown; average measurements are 2 by 1·4 in. During the breeding-season its note resembles the syllables *che-ah*, and at other times it utters a laughing *af, af, af*, like a Gull. The food of this species is somewhat varied; in Ceylon, Col. W. V. Legge found it to consist of frogs, crabs, and fish; in Egypt, Von Heuglin observed the bird darting into the dense smoke of a prairie fire in pursuit of locusts; and in Algeria Mr. Salvin noticed it hovering over grass-fields and pouncing upon grasshoppers and beetles; it also captures many species of insects on the wing. Its flight is graceful but not very rapid, its long wings being plied with measured steady strokes. In its partiality for lagoons, tidal rivers, and inland lakes of fresh or brackish water, and in its comparatively short, although distinctly forked tail, and moderately-webbed feet, this species forms a natural link between the Marsh Terns and those which frequent the sea-coast. It was made the type and sole representative of the genus *Gelochelidon*, by Brehm, who, very consistently, erected the genus *Sylochelidon* for the Caspian Tern.

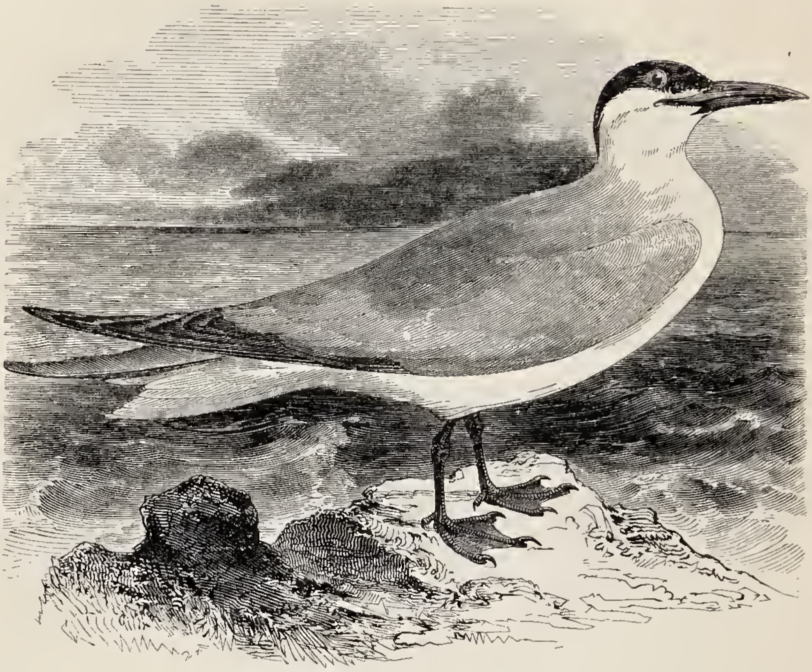
In the adult in summer the bill is black, and averages one inch and a quarter in length from the point to the feathers on the forehead; the angle at the symphisis of the lower mandible rather prominent, whence the name Gull-billed; irides reddish-brown; forehead, crown, and nape jet black; neck behind greyish-white; back, scapulars, wings, the coverts, secondaries, and tertials, upper tail-coverts, and central tail-feathers uniform pale ash-grey; outer tail-feathers lighter; the outside web of the first primary slate-grey, the other primaries pearl-grey, darker at the tips; chin, throat, breast, belly, and all the under surface white; legs, toes, membranes, and claws reddish-black. The whole length of the bird figured and described, fifteen inches and a half; wing from the carpal joint thirteen inches.

In winter the head is white, streaked with grey and black, and a dark stripe runs through the eye and ear-coverts.

The male is, as a rule, rather larger than the female, but there is great individual variation in size, especially as regards the bill. In the latter the difference is more striking in two individuals shot from the same flock in South Brazil than in any other specimens in the large series which the Editor has examined from various parts of the world.

A young bird of the year has the bill brown; head on the top dull white, varied with pale brown and dusky streaks; on the ear-coverts a spot of greyish-black; neck all round white; back, scapulars, and tertials orange-brown, spotted with darker brown; wing-coverts ash-grey, tipped with pale orange-buff; primaries pearl-grey; tail but little forked; chin, neck, and all the under surface of the body white; legs and feet brown. As in the other Terns, the orange-buff markings are soon lost, and in this species there is no dark bar on the carpal joint to indicate immaturity; the bill and legs are, however, lighter than in the adult in winter dress. Even in birds of the second year which have assumed the black crown, the legs and feet are still livid red in fresh examples, drying a reddish-brown in preserved specimens.

The nestling in down is buffy-white, mottled and striped with darker grey on the upper parts; under parts greyish-white.



STERNA CASPIA, Pallas.*

THE CASPIAN TERN.

Sterna caspia.

SEVERAL specimens of this fine large Tern, called the Caspian Tern, from the locality in which it was obtained by Pallas, have been killed on the English coast, particularly in the counties of Suffolk and Norfolk. Two early examples are those mentioned by the Messrs. Paget, in their Sketch of the Natural History of Yarmouth and its neighbourhood, one of which was killed in October, 1825 ; another was presented to the Norwich Museum, by the Rev. G. Steward of Caistor, near which place it was shot. Three or four were seen at Aldborough, in Suffolk, one of which was shot, and preserved in the Museum of the Philosophical Society of Cambridge, as mentioned by the Rev. L. Jenyns (Man. Brit. Verteb. p. 265). The late Mr. Heysham sent the

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* Nov. Comm. Petrop. xiv. p. 582 (1769-70).

Author notice of a Caspian Tern, shot in Norfolk in 1839; one was killed on the 9th June, 1849; one in the same neighbourhood in June, and another on the 16th July, 1850; another in August, 1851; and an adult male in May, 1862;—all near Yarmouth.

On the 17th May, 1851, an adult was shot, disgorging several fish as it fell, at Caythorpe, on the borders of Lincolnshire and Nottinghamshire; and in September, 1874, one is said to have been killed near Filey in Yorkshire, which appears to be the most northern occurrence in this country. On the south coast one was obtained near Christchurch, Hants, some years ago;* and there are probably a few other instances not enumerated.

The Caspian Tern is nowhere numerically abundant, although very widely distributed. It breeds in Sweden, from the Gulf of Bothnia downwards, to Denmark, the nearest and best known colony being on the island of Sylt. The Editor is inclined to believe that a few pairs nest on the coast of Holland, as on the 9th July, 1875, he saw at early dawn six adult birds flying in pairs, and evidently going out to procure food, near the mouth of the Maas. A mere straggler to the coasts of France and the lakes of Switzerland, it breeds in several localities on the shores of Spain, and also on some small islands near Sardinia, although rare on the coasts of Italy; it has however been observed throughout the Mediterranean, and breeds on the Black Sea. Apparently a resident in Egypt, it frequents the entire coast of Africa, and Sir John Kirk found it breeding on the low islands off the mouth of the Zambesi. A visitor to the islands of the Indian Ocean, it nests in the Persian Gulf, and, crossing the great mountain ranges on its migrations, it occurs in winter in India and Burmah, and breeds in Ceylon. To the north it can be traced from the Caspian, across temperate Asia, to China; and although there is a break of continuity in the Eastern Archipelago, it is found residing on the coasts of Australia and of New Zealand; examples from the latter being somewhat larger on the average than European specimens.

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* *Cf.* J. E. Harting, 'Handbook of British Birds,' pp. 167, 168.

In America this fine Tern is found breeding from Labrador to Virginia, and even to Florida. Mr. Bernard Ross records it from Great Slave Lake and the Mackenzie River, and Mr. E. W. Nelson observed it on two occasions at the mouth of the Yukon River, in Bering Sea. It probably ranges along the entire west coast of North America, as it has recently been obtained by Mr. Forrer in California and North Mexico.

The Caspian Tern deposits its eggs in May or June on the bare sand, in a slight hollow, which is occasionally lined with a few pieces of shell or bents. They are usually two or three in number; of a stone-grey or stone-buff, spotted and scrolled with ash-grey and dark red-brown; average measurements 2·55 by 1·7 in. Its ordinary food consists of fish. The note is a loud, harsh *krake-kra*, which is uttered freely when its breeding-haunts are invaded. It is nearly as partial to brackish lakes as to the sea-shore, and when searching for food it has a characteristic habit of keeping its bill pointed downwards.

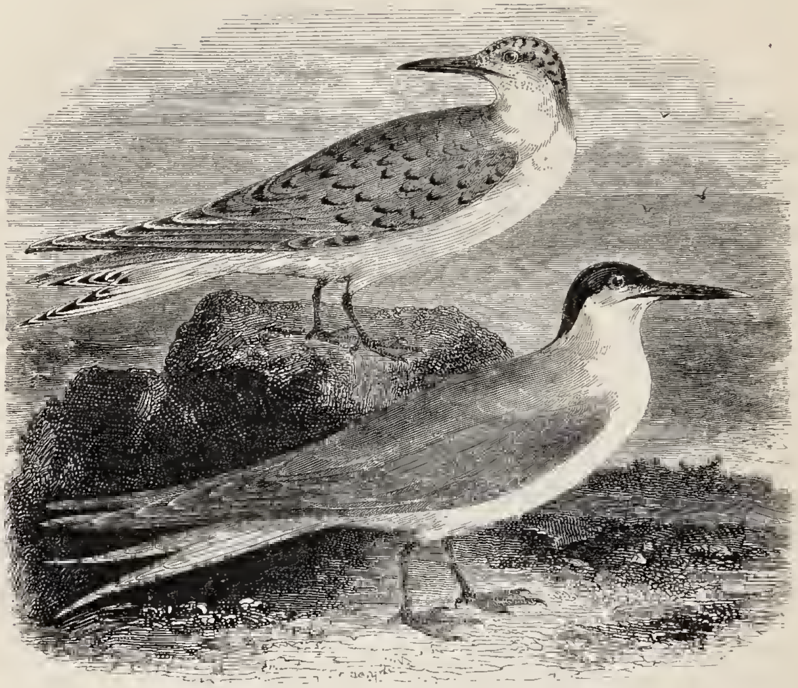
In the adult in summer plumage the bill is vermilion-red, lightest in colour at the point; irides dark brown; forehead, all the top of the head and the nape of the neck rich black, the feathers of that colour on the occiput elongated; lower part of the neck, all round, white; the back, and all the upper surface of the body, the wings and tail-feathers, ash-grey; the first six wing-primaries darker at the tips and on the inner webs, with white shafts; the tail moderately forked; the chin, throat, breast, and all the under surface of the body, pure white; legs, toes, their membranes, and the claws black, the latter strong and curved. In winter the crown is streaked with black, and there is a patch of dark feathers behind the ear-coverts.

The whole length of the adults, from the point of the beak to the end of the long feathers of the tail, varies from nineteen to twenty-one inches: the males being rather larger than the females. From the carpal joint of the wing to the end of the first quill-feather, sixteen inches and a half, the ends of the wings extending considerably beyond the ends of the forked feathers forming the tail.

Young birds of the year, before their first autumn moult, have the beak of a dull red, horn-coloured at the point; the forehead and top of the head white; the upper surface of the body varied with patches of ash-brown, and darker transverse bands; the feathers of the tail have dark ends; the primary quill-feathers are also dark; all the under surface of the body pure white.

The downy nestling about a week old, for which the Editor is indebted to Mr. E. Bidwell, is of a dull white mottled with grey, and the newly-sprouting feathers on the wings are buff-tinted; bill and feet yellow.

The Swift Tern, *Sterna bergii*, Lichtenstein, was recorded by Thompson (Ann. N. H. xx. p. 170), under the name of *S. velox*, Rüpp., as having been shot at the end of December, 1846, between Dublin and Howth. The specimen, which was in full breeding-plumage, became the property of the late Mr. Watters, and was undoubtedly the species it was said to be. Information obtained by the Editor when in Dublin, from several sources, but especially from the late Mr. R. J. Montgomery, so often mentioned in Thompson's 'Birds of Ireland,' left no doubt that the introduction of this species began with the temptation to play a practical joke, afforded by an imperfectly-skinned foreign specimen, purchased with others by a young taxidermist. The limits of humour were passed when the perpetrator had not the moral courage to refuse the reward pressed upon him, and details, which will not bear investigation, were invented to substantiate the original statement. The Swift Tern is a large intertropical species which has never been known to straggle to any part of Europe, nor even to the north coast of Africa west of Lower Egypt. Major E. A. Butler found it breeding on the island of Astolah, off the coast of Baluchistan (Stray Feathers, 1877, p. 298). This species has the mantle and tail of a slate-grey, and in breeding-plumage the black crown is separated from the bill by a broad white frontlet.



Sterna cantiaca, Gmelin.*

THE SANDWICH TERN.

Sterna Boysii.

The Sandwich Tern was first observed and obtained in this country at Sandwich, in 1784, by the late Mr. Boys, who sent specimens to Latham, by whom the particulars respecting it were published in the sixth volume of his General Synopsis, p. 356. Attention being thus drawn to this species, it was ascertained to be a regular summer visitor here, appearing in spring and departing in autumn, after having reared its brood. Owing to persecution by egg-collectors, and to other causes, it has been driven from several localities where it formerly bred; and in others its numbers have undergone considerable diminution. A few pairs nest in the Scilly Islands, but the Editor has no positive knowledge of the existence of any colony on the south or east coasts of England short of the Farne Islands, although in former years it bred at the mouth of the Blackwater in Essex, and abundantly on Coquet Island off Alnwick. Beyond the Scottish border there are several breeding-places: one of them on the Firth of Tay; it seems probable there is another in Sutherlandshire; and it also nests on Loch Lomond, and on some other lochs on the west coast of Scotland. There does not appear to be any authenticated breeding-place on the coast of Wales: but a few pairs nest annually in a carefully preserved locality on Walney Island off the coast of Lancashire, and there is a small colony in Cumberland.

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* Syst. Nat. i. p. 606 (1788). The name of *S. boysii* was not conferred by Latham till 1790. In Supp. I. to the General Synopsis, p. 296 (1787), he calls it *Sterna sandvicensis*, but it seems undesirable to adopt this name.

In Ireland, the Sandwich Tern is annually observed upon the coast, and has a few breeding-haunts in some of the islets that are rarely visited by the naturalist. The Editor has visited one colony, which was discovered by Mr. R. Warren, who described it in 'The Zoologist,' 1877, p. 101. Up to 1858 the Terns nested on a small lough near Ballina, on a low flat mud-bank close to a colony of Black-headed Gulls; but this bank being submerged during a wet summer, the Terns moved to a larger moorland lough where there is also a breeding-place of the Black-headed Gulls on an island, among the reeds. The Terns make their nests on a bare part of the island, a little way from those of the Gulls; and the proprietor, Sir Charles Knox Gore, who strictly preserves both species, has had the encroaching bushes and long grass cut off the island in order to give the Terns more space for their nests. They usually arrive in April, although Mr. Warren has observed them as early as the 20th of March; and they breed earlier than the smaller Terns, the eggs being frequently ready to hatch by the end of May. On the east coast of England they are seldom seen on their migration northward before May, and the return passage commences in August.

The range of the Sandwich Tern hardly extends to the north of the Danish Islands, and it is very rare in the Baltic, but on the low coasts and islands of the North Sea, from Jutland to the Netherlands, it breeds in great abundance. On migration it visits the coasts of France, and there are probably some breeding-places in the north-west; it is common in Spain on passage, and some remain to breed, as they also do in Sardinia, and perhaps in Sicily. Further up the Mediterranean it is comparatively rare, but it breeds plentifully in the Black Sea, and on the Seal Islands in the Caspian. Eastward it is found along the Arabian and Persian coasts as far as Kurachee in Sind. It frequents the north coast of Africa; breeds in the Canaries, and goes down the west coast in winter as far as Cape Colony.

In America this Tern, which was formerly distinguished there as *Sterna acuflavida*, is found in summer along the Atlantic seaboard from New England to Honduras, where Mr. Salvin found it breeding, and he also found it common on both coasts of Guatemala. In winter it migrates southwards to Brazil, the Editor having a specimen obtained at Bahia.

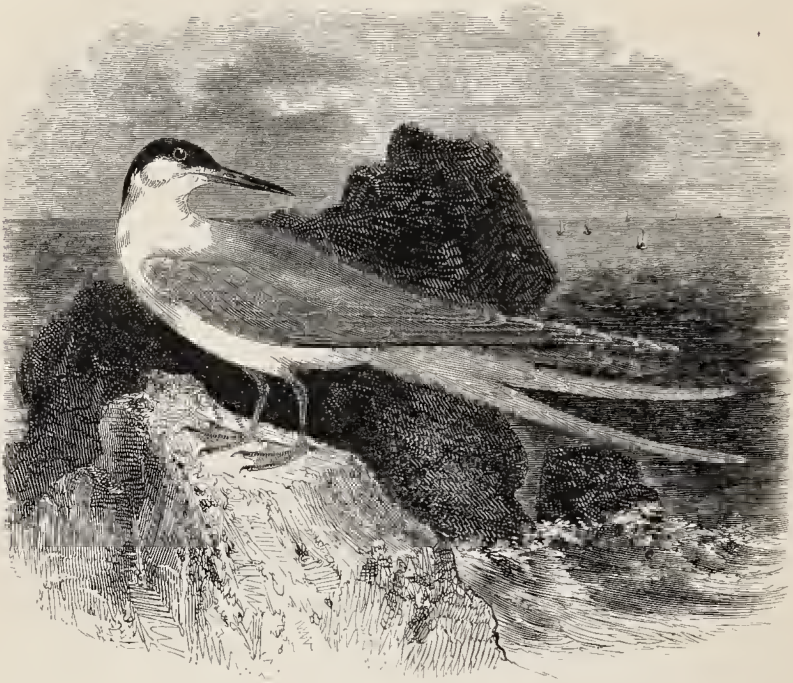
The nests are frequently but little more than shallow holes scratched in the sand among the sea-campion or other plants, but on Walney Island and elsewhere, tolerably solid structures of grass bents have been noticed. The eggs are usually two in number, rarely three; but in the large breeding-colonies birds not unfrequently drop their eggs in one another's nests, and the Editor once found three eggs—two of the Sandwich, and one belonging to the Arctic or the Common Tern—in the same hollow of a mass of sea-tang, on the Wamseys, the principal colony of the Farne Islands. In colour there is considerable variation, many of the eggs being of a rich yellowish-stone ground, thickly scrolled and spotted with ash-grey, orange-brown, and deep red-brown, but in others the ground-colour is creamy-white; average measurements 2 in. by 1·5 in. By the fishermen this species is called, *par excellence*, 'the Tern,' all the other species passing under the general name of 'Sea Swallows.' Its habits strongly resemble those of its genus, and it subsists upon similar kinds of fish, the sand-lance and young gar-fish forming the principal supply. Its flight is strong and rapid, making a great advance at each stroke of the pinions, and, except when engaged in incubation, it is almost constantly on the wing, uttering at intervals a hoarse and grating cry, *kirhitt, kirhitt,* which can be heard at a great distance.

The adult bird in summer has the bill black, the tip lemon-yellow; the irides hazel; all the parts of the head above the eyes black; the feathers on the occiput elongated, forming a loose plume which ends in a point; cheeks, sides, and lower part of the neck behind, white; back and wings, pearl-grey, the ends of the secondaries and upper primaries, almost white; the longest primary slate-grey, with a white shaft, the next three primaries diminishing in colour in succession till they become of the same tint as the wing-coverts; tips and inner margins of webs, white; the tail white and forked; chin, throat, neck in front, breast, and all the under surface of the body white, often suffused with a lovely salmon-pink; legs, toes, and their membranes black, claws curved and black. The whole length of the bird, from the point of the beak to the end of the longest tail-feather, is fifteen inches. From the carpal joint to the end of the longest quill-feather twelve inches. In winter the forehead and crown are white, spotted and streaked with black.

A young bird of the year killed on the 10th of August is about ten inches in length; the upper mandible dark brown, the under one pale brown at the base; forehead greyish-white, top of the head and the occiput black; back and smaller wing-coverts ash-grey, varied with pale brown; greater coverts ash-grey, quill-feathers bluish-grey, the inner margins white, the outside quill-feather almost black, except the shaft, which is white; tail-feathers varied with ash-grey and brown; legs, toes, and membranes dark brown.

The young bird figured in the illustration has the head mottled with black and white; the back, wing-coverts and tail-feathers varied with angular lines of black.

A nestling about three days old, taken on Norderney, has the upper parts finely mottled with buffy-grey; under parts white; bill yellowish; legs and feet greyish-brown; webs paler.



STERNA DOUGALLI, Montagu.*

THE ROSEATE TERN.

Sterna Dougallii.

THE ROSEATE TERN was first discovered on two small rocky islands, called the Cumbraes, in the Firth of Clyde, in 1812, by Dr. McDougall, of Glasgow, who sent a specimen and particulars to Colonel Montagu, from which a figure and description were inserted in the Supplement to his Ornithological Dictionary. Some years ago Selby found a numerous colony breeding on the Farne Islands, but that locality had been nearly abandoned for a long time, until in 1880 several pairs returned to their old haunts in the month of May, when some, if not all, were shot, in defiance of the law, by one of the Trinity lighthouse keepers, who sent the specimens in the flesh to a collector in Birmingham. On the west coast it formerly bred in the Scilly Islands; Mr. John Hancock found it nesting some years ago on Foulney Island, and Mr. Harting and the Editor observed it in May, 1864 and 1865, on the neighbouring Walney Island on the Lancashire coast. It probably nests in a few localities on the coast of Scotland, but statements regarding its breeding on Loch Lomond or any other lochs appear to be devoid of foundation. So far as is known, the Roseate Tern nests almost exclusively on islands, and generally on those which are remote and storm-beaten. Off the coast of Ireland, where there are many such islets, several breeding-places have been enumerated by Thompson; but most of these have since been abandoned, and although the birds have probably migrated to other and less disturbed localities, it would not be easy, even if it were desirable, to indicate precisely the places where colonies may still be found. There is no doubt that numerically this species has undergone considerable diminution, not so much owing to collectors—for genuine British-killed birds are seldom to be met with—as to indiscriminate egging on the part of fishermen, and the havoc caused by the parties of gunners who used to visit the islands where this and other Terns bred, and kill boat-loads of them, either to furnish plumes for ladies' hats, or for the mere love of slaughter. This Tern is, moreover, exceedingly intolerant of interference, and not only does it easily abandon a locality when persecuted by man, but it also gives way before the encroachments of its heavier and stronger-billed congener the Common Tern, *S. fluviatilis*. Dr. Louis Bureau, who has observed the habits of both species for several years on the coast of Brittany, informed the Editor that he had known three colonies of the Roseate Tern broken up in this manner. As soon as the young are able to fly the breeding-places are abandoned, and on migration a straggler is occasionally obtained on the British coast; an adult shot near Hunstanton in Norfolk by Mr. G. Hunt, on the 12th July, 1880, is recorded by Lord

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* *Sterna Dougallii*, Montagu, Supp. Orn. Dict. (1813). This species has not unfrequently been designated *S. paradisea*, Brünnich, but any one who will take the trouble of referring to that author's description, will at once see that he was entirely unacquainted with the Roseate, and alluded to the Arctic Tern.

Lilford (Zool. 1881, p. 26). It is doubtful if any individuals of this species are to be found on our coasts by the end of August.

The Roseate Tern is an oceanic and southern species, which is not known to range beyond 57° N. lat., and it is merely a straggler to the islands and coasts of Denmark and the North Sea. On the islets of the north-west of France there are several colonies, and although exceedingly rare in the Mediterranean, a specimen has been obtained off the Balearic Islands in May, and one on the coast of Liguria in June. Mr. Godman observed it in the Azores, but its course cannot be traced down the west coast of Africa, although the Editor has examined several specimens from the Cape of Good Hope and Natal. From the east coast of Africa its range extends to Madagascar and the islands of the Indian Ocean up to Ceylon, where Mr. Parker found it nesting; the Bay of Bengal, and the Andaman Islands, where Captain Wimberley obtained both birds and eggs in June, some of which he presented to the Editor. Visiting Burmah and Tenasserim, this species ranges through the Malay Archipelago to Torres Straits, where it breeds; Gilbert found it rearing its young on Houtman's Abrolhos, off the west coast of Australia, in November, and Mr. E. L. Layard has recently sent home both birds and eggs from New Caledonia and the neighbouring islands.

In America, where it is far more abundant than in Europe, it breeds on the Atlantic coast from Massachusetts to Florida, and in the Bermudas; also in Central America, where Mr. Salvin obtained it; and it visits Jamaica, Cuba, Puerto Rico, and St. Thomas. American examples are on the average a trifle larger and stronger-billed than European specimens; and birds from South Africa, Ceylon, the Andaman Islands, Australia, and New Caledonia sometimes exhibit a larger amount of orange-red at the basal half of the bill than specimens from the northern hemisphere. On this preponderance of red Mr. Gould's *Sterna gracilis* is mainly founded, but the Editor, who has examined the typical specimen in the British Museum, can see nothing in it to warrant specific distinction. The amount of red seems to depend upon age and season, and in preserved specimens it is to a great extent evanescent.

Colonel W. V. Legge, who had many opportunities for observing this species in Ceylon, says that it is purely a sea-coast species, rarely being seen away from salt water, and seldom even frequenting salt lagoons near the sea. Although not a swift bird in its ordinary flight, it turns with ease and grace, and while proceeding with light though measured strokes of its wings over the breaking surf, it will suddenly wheel round, point its bill downwards, and either fall like an arrow upon its prey, or sweep gracefully down in a curve and delve up the 'fry' from the surface. Its long streamers are carried close together, so that the bird appears on the wing to have an attenuated parrakeet-like tail. It constantly utters a monosyllabic and not unmusical piping note, but when a pair are together they give out a harsh *crake* (B. of Ceylon, p. 1034). By a fine ear this note is quickly recognized.

The eggs of the Roseate Tern are usually two or three in number, and are placed in a hollow of the sand, sometimes surrounded by a few dried bents. As a rule they are somewhat longer than those of the Arctic Tern, but they are subject to similar variations. The ground-colour is a creamy-white or buff-brown, blotched and clouded with bluish-grey and rich brown: average measurements 1·7 by 1·15. The food of this species is small fish.

On the wing the Roseate Tern may be distinguished from its congeners by its elegant and attenuated form, and its proportionally short wings: it is in fact among the circling crowd of Arctic and Common Terns, like the greyhound to other dogs. In the hand an unfailing sign of distinction is presented by the primaries, in which the white inner margins extend quite round the tips and even a little way up the outer webs. No other European species is so characterized, except the Sandwich Tern, whose size alone would prevent confusion; and, in a less degree, this will apply to *Sterna frontalis*, a species intermediate in size, and found in New

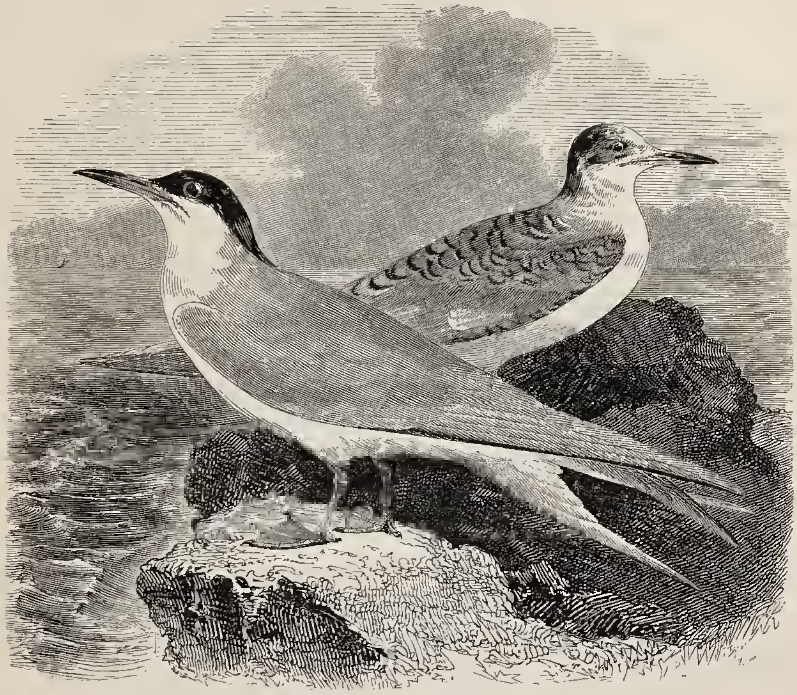
Zealand. The latter has similar white margins, but it is larger than the Roseate Tern, and, in the breeding-plumage, it has a white band at the base of the bill.

In the adult bird in summer, the bill from the point to the nostrils, is black, from thence to the base or gape, red; the irides dark-brown; all the top of the head black; neck, all round, white; back, wing-coverts, and quill-feathers, ash-grey; the outer webs of the primaries dark grey, and a streak of the same colour next the shaft on the inner web, followed by a white margin which runs down to and round the tip to join the outer web; tail-feathers very long, extending beyond the ends of the wings, the colour pale ash-grey; breast and all the under surface of the body white, strongly tinted with a delicate rose-colour, whence the bird derives its name; legs, toes, and their membranes, red. In winter the forehead becomes white, or nearly so, and the orange-red at the base of the mandible diminishes or disappears.

The whole length of the bird is fifteen inches and a half. From the carpal joint to the end of the longest quill-feather nine inches and a quarter.

The young bird of the year has the bill black, orange-yellow at the base; forehead and crown of a very pale wood-brown; region of the eyes, ear-coverts, and nape of the neck, black, the latter barred with pale wood-brown; back and wing-coverts bluish-grey, barred with black and tipped with yellowish-white; quills grey, as in the adult; tail grey, the exterior webs the darkest, the tips of the feathers white; under parts white; legs pale red. By the end of the year the buff-colour and the barrings have disappeared, but a dark line along the carpals, some darker spots on the inner secondaries, and the shorter and darker tail, are signs of immaturity which are lost at the next autumn moult.

The nestling is white below, and spotted with white, grey and buff on the upper parts; it is much lighter in colour than the young of either the Common or the Arctic, and more like the nestling of the Sandwich Tern.



STERNA FLUVIATILIS, Naumann.*

THE COMMON TERN.

Sterna hirundo.

THE COMMON TERN is deservedly so named as regards the greater part of the British Islands, although in the Shetlands it is superseded by its congener the Arctic Tern. It breeds, however, in the southern districts of the Orkneys; also in the Hebrides and in several localities on the west coast and lochs of Scotland, from Sutherlandshire to the Solway; also along the east coast, at Buddon-ness, Taymouth, and many other places. Down to the Farne Islands on the one side, and to the coast of Lancashire on the other, it is, however, less abundant than the Arctic Tern, with which it is frequently found breeding, although the two species generally keep a little apart from each other, occupying different islcts or portions of the same coast. Southwards the Common Tern replaces the Arctic, with a few exceptions, which will be noticed when treating of that bird; and along the coast of England and Wales it is distinctly the predominant species. From Norfolk, along the east and south coasts, it has several breeding stations; but in the Scilly Islands, it is stated by Mr. Rodd to be far less numerous than the Arctic Tern.

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* Isis, 1819, p. 1847. It appears from the description given by Linnæus of his *Sterna hirundo* and the localities which it frequented, that he did not distinguish the Common from the Arctic Tern. Naumann was the first to do this, and his names are therefore employed for both species.

In Ireland the Common Tern is distinctly the more abundant species, breeding all round the coasts, and on many of the salt and fresh-water loughs. Its arrival in the British Islands takes place in May, and the autumnal migration lasts from August to October. It ascends rivers for a considerable distance, and has often been observed on small pieces of water far inland; it is even by no means uncommon to see a few birds hovering over the Serpentine and other sheets of water in or near the metropolis.

The Common Tern is generally distributed, during the breeding-season, on the coasts and rivers of Europe, from Norway to the extreme east of the Mediterranean, as well as in the islands of the Atlantic. Crossing that ocean, this species is abundant in North America (where it was formerly distinguished as *S. wilsoni* by Bonaparte), from Labrador to Texas; and the Editor has examined specimens obtained at Cumaná in Venezuela, and at Bahia in Brazil, in autumn. It has not, however, been recorded as yet from the Pacific side.

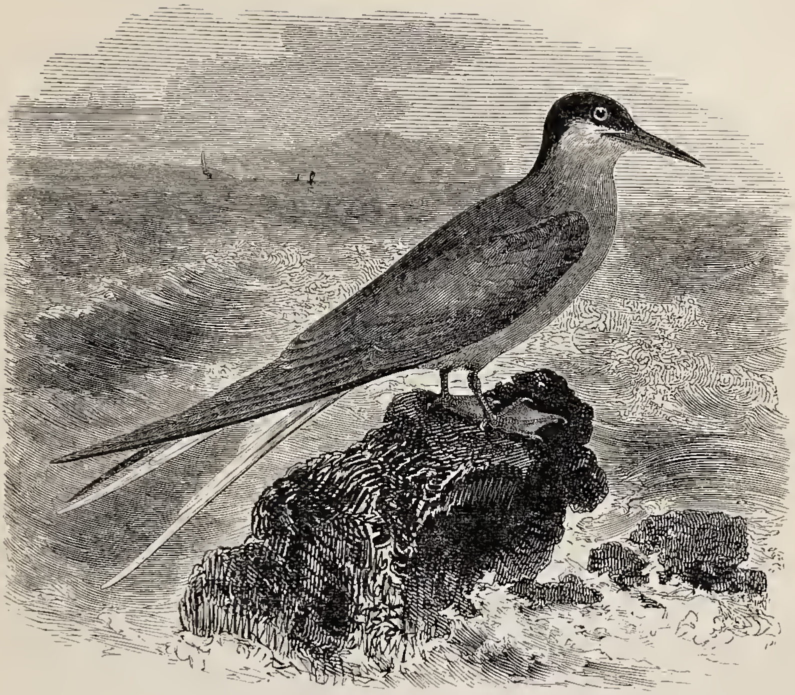
Returning to the eastern hemisphere, we find this Tern in Western Asia, and on the shores of the Red Sea, straggling to the coasts of India in winter. On the elevated lakes of Kashmir, Tibet, and Southern Siberia as far east as Lake Baikal, it appears to be replaced by a form which the Editor has distinguished (P. Z. S. 1876, p. 649) by the name of *Sterna tibetana.* The latter, in breeding-dress, has the sides of the neck, shoulders and flanks, of a clear grey, which assumes a darker and more vinous tint on the breast and abdomen; the mantle and wings are also much darker, and the bill and feet smaller than in average examples of the Common Tern. From Lake Baikal to Kamtschatka and Japan, this form is replaced, in its turn, by a very distinct species, *S. longipennis,* which resembles the Arctic Tern in its slender form and grey-tinted under parts, but differs from both species in having the legs and feet brown, and the bill black in the breeding-season, and probably at all other times. It appears to be the Asian form, *S. tibetana,* which visits Ceylon, and also the southern coasts of Africa, in winter, but *S. fluviatilis* can positively be traced along the west coast as far as Accra. In the Red Sea and down to the Laccadives, the representative species is *S. albigena,* a slender Tern of a general smoky hue, the rump and tail being as dark as the mantle.

The Common Tern nests in May and June, depositing its eggs, usually three in number, on the sand, shingle, or dried wrack in the vicinity of water; often in sheltered situations amongst sand-hills. The nest is a mere depression, occasionally with the addition of a few crossed bents. The eggs are of a slate-grey or yellowish stone-colour, blotched and spotted with ash-grey, and dark red-brown; average measurements 1·7 by 1·1 in. On fine warm days, the parent birds are seldom to be found sitting on their eggs, but they cover them at night and during inclement weather. On the approach of an intruder, they show many signs of anger and distress, uttering a sharp *pirre;* and if the young are hatched, they will often contrive to feed them, unperceived, by skimming over the spot, and dropping small fish close to the nestlings, whose mottled colour renders them almost undistinguishable from the surrounding shingle. They never dive, but they may often be seen floating on the surface of the water.

The food of the Common Tern, like that of its congeners, consists of young coal-fish, sand-eels and such small fry, shrimps, and crustaceans, and they will frequently catch fish when thrown to them by the fishermen, before they reach the water. In pursuit of their prey they frequent the shallow estuaries and inland waters, rather than the open sea; and in Holland, where these Terns may be seen on the canals in the towns, the ornamental fish-ponds have to be covered over with netting to preserve their inmates. The Editor was amused one September day at Utrecht, by watching the ineffectual 'stoops' of some young Terns which had not yet had time to gain experience of the nature of the obstacle. Mr. J. H. Gurney, jun., has given an interesting account of two nestlings which were reared by Mr. Green, taxidermist, of Stockton-on-Tees. So attached did they become to him, that they answered to his call or whistle, and after an absence of a fortnight, they renewed an intimacy which lasted till the October migration.

In the adult bird in summer the bill is coral red, the point black; irides dark brown; forehead, crown, and nape, black; back and wings ash-grey; outside web of the first primary slate-grey, the shaft white; a broad streak of slate-grey next the shaft on the inner web, followed by light-grey margins; tail-coverts white; outer webs of tail-feathers ash-grey, inner webs white; chin, neck, breast, and under surface, dull white; legs, toes, and membranes, coral red. The whole length of the bird is fourteen inches and a quarter; from the wrist to the end of the longest quill-feather ten inches and a half.

A young bird killed in August has the point of the beak dark brown, the base reddish-yellow; forehead dull white; posterior part of the crown, the ear-coverts, and the occiput, black; chin and neck, all round, white; back and wing-coverts ash-grey, each feather margined with ash-brown and white; outer web of the first quill-feather black; the others ash-grey; under surface of the body white; legs, toes, and membranes, reddish-brown. In winter the colours of the bill and legs fade in both young and old birds. The downy nestling is of a yellowish-brown, streaked and spotted with black on the upper parts; chin and throat, sooty-brown; under parts white, tinged with buff on the flanks.



STERNA MACRURA, Naumann.*

THE ARCTIC TERN.

Sterna arctica.

THE ARCTIC TERN entirely replaces the Common Tern in the circumpolar regions, but on the coasts of the British Islands and of North-western Europe both species are found, and were for some time united by the earlier writers on ornithology. Naumann was the first to distinguish them, and he was followed, a year later, by Temminck. It is characterized by its more slender form, longer tail-feathers, a coral-red bill without any appreciable amount of black at the tip, very short tarsi, and the french-grey of the under parts is as dark as that of the back and wings. The young may always be recognized by the shorter tarsus, and by the narrowness of the dark line which runs along the shaft on

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[*] Isis, 1819, p. 1847.

the inner webs of the primaries. This line is both darker and much more extensive in the Common Tern.

As regards the British Islands, the Arctic Tern is the only species found breeding in the Shetlands, and it is by far the most abundant in the Orkneys, the Hebrides, and on the entire coast of Scotland. In England it breeds in numbers on the Farne Islands, and sparingly on the coast near the mouth of the Humber, south of which it has not yet been proved to nest on the east side of the island, nor along the shingley coast of Kent and Sussex where the Common Tern occurs. Mr. Cecil Smith, however, states (Zool. 1883, p. 454) that he found it breeding on the Chesil beach in Dorsetshire. On the west side it breeds on the shores of Cumberland, on Walney Island in Lancashire, and probably on the Skerries and some other islands belonging to Wales; and Mr. Rodd states that it is far more abundant in the Scilly Islands than the Common Tern. In Ireland it has many breeding stations, from the Copelands, off Belfast, to the myriad islets of Galway and Kerry, and there are probably some on the eastern side of the island.

It arrives early in May, and the majority pass southwards in September and October, a few remaining till the end of that month. Owing to the numbers which breed in high northern latitudes, this species is by far the most abundant on the autumn migration, and, in a less degree, in spring. A most unusual number of this and the Common Tern made their appearance early in the month of May of the year 1842, in and about the estuary of the Severn, and up the line of its course; also at Swansea, Monmouth, Worcester, and many inland places. According to the 'Bristol Mirror,' the birds were assembled in such vast numbers in the harbour and floating docks of that city, that two or three hundred were killed with stones and other missiles, whilst several were caught alive; and so tame were they, that many were observed to pitch on the backs of passers-by. Flocks of these birds were also observed the same day on the Channel coast; and a little later similar numbers were noticed on the coast of Ireland from Cork to Limerick. The wind had been blowing hard for many days from the east and N.E., but suddenly changed to the westward, continuing to blow hard. Some of the specimens had not acquired the perfect black head peculiar to the breeding-season, but all were on their route to their northern summer quarters, their intended course having been interfered with by the prevailing strong winds.

The Arctic Tern is abundant in the Færoe Islands, Iceland, Greenland, Spitsbergen, Novaya Zemlya, also along the entire coast of Norway, Sweden, and Russia. It is said to breed up to the extremities of the deep fjords which indent those countries, and even on the fresh-water lakes, but such is not its custom in our islands, in which its habitat is exclusively marine. Its summer range can be traced along the coast of Siberia to Bering Straits, and across them to the American mainland; thence by the shores and islands of the Arctic Sea, the Great Bear Lake and the Fur countries to Hudson's Bay. It goes as far north as human foot has trod, for Parry's expedition met with it breeding in numbers to the north of Spitsbergen in 81¾° N. lat.; and Major H. W. Feilden, when in H.M.S. 'Alert,' found, on 21st August, 1876, eight or ten pairs breeding on a small islet off the north end of Bellot Island (lat. 81° 44′ N.), the land at this date being covered with snow about three inches deep. In one nest lay a newly-hatched Tern, which seemed quite well and lively in its snow-cradle, and this, the most Arctic of specimens, has been kindly presented to the Editor. The parent birds had evidently thrown the snow out of the nest as it fell, for it was surrounded by a border marked by the feet of the old birds, and raised at least two inches above the general level (Ibis, 1877, p. 408). On the east coast its breeding-range extends at least as far south as Massachusetts; and in winter it can be traced to Bahia in Brazil, and to Tumbes in Peru.*

Crossing the Atlantic, the Arctic Tern visits the Canaries and Azores, and is found during migration along the coast of France and the Iberian Peninsula, occasionally straggling into the Mediterranean as far as the east coast of Italy. It descends the coast of Africa as far as Table Bay, and a specimen has been obtained in 32° S. lat., 57° 18′ E. long., far to the south-east of Madagascar, on the 23rd October, at the commencement of the south-east monsoon (P. Z. S. 1880, p. 163). In the southern hemisphere *S. virgata* or *S. vittata*, two distinct, although similar and representative species, inhabit the islands of the Southern Ocean from Tristan d'Acunha to Kerguelen.

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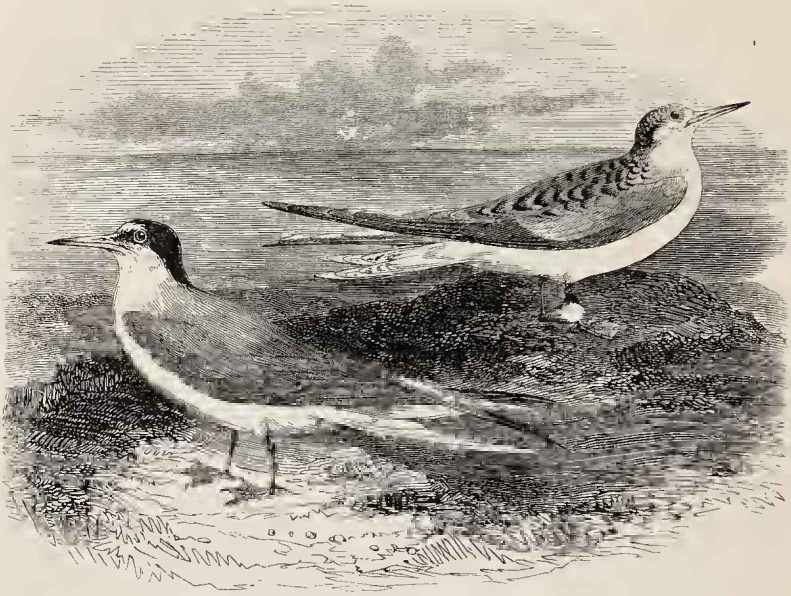
* *Sterna pikei*, Lawrence, appears to be an immature example of this species from California; and *S. portlandica*, Ridgway, is a bird of about twelve months old, obtained just before commencing its moult.

Like its congeners, the Arctic Tern breeds in colonies, and the eggs are laid in mere depressions of the sand or gravelly beach, among scanty herbage, or even on the bare rock just above the reach of the waves. The eggs are sometimes three in number, but it would appear, from the observations of many ornithologists, that, especially in northern localities, the complement is frequently only two. On the average, they are slightly smaller than those of the Common Tern, measuring 1·6 by 1 in.; and they are subject to rather more variation in colour. A pale bluish-green ground is very frequent, and a rich ochre-red with rufous-brown spots is occasionally found. In defence of its nest it is very bold, attacking the intruder with fury, and does not confine itself to menaces. Mr. Wm. Traill states (Scot. Nat. v. p. 346) that on 10th July, at North Ronaldshay, he was struck so sharply five or six times, apparently with the beak, that if he had not been wearing a cloth cap the blows would have been painful. Saxby says (B. of Shetland) that he has seen this species attack and fairly beat off the Great Black-backed Gull and the Raven. He and his brother once saw a Hooded Crow assailed by a swarm of Arctic Terns, which drove it foot by foot to the level of the water, until the wings dipped and its plumage became saturated, the angry Terns only ceasing their swoops when it was dead. The food and habits of the Arctic hardly vary from those of the Common Tern. When fishing over deep water Terns may often be seen to dash down with such force as to raise a cloud of spray which momentarily hides them from the view of any one nearly on the same level, but when watched from a commanding position the Editor has never witnessed complete submergence, and certainly no approach to diving.

The adult bird in summer has the bill coral-red; iris dark brown; forehead, crown, and nape black; back, wings, and wing-coverts pearl-grey; outer web of the first primary lead-grey; tail-coverts and tail-feathers white, the two longest tail-feathers on each side grey on the outer webs; chin and cheeks white; upper part of neck in front and on the sides, ash-grey; breast and all the under surface of the body as dark a grey colour as that of the back; legs, toes, and their membranes orange-red. The whole length of the bird, from the point of the bill to the end of the middle, or short, tail-feather, is twelve inches and a half, to the end of the longest tail-feather two inches and a half more, or fifteen inches whole length; from the wrist to the end of the longest quill-feather, eleven inches; length of the tarsus only half an inch.

A young bird of the first autumn, nearly full-grown, and measuring thirteen inches, has the bill dull brown at the point, the remainder red; forehead dull white; crown of the head mottled black and white; back of the head and nape uniform dusky-black; back and wings pearl-grey; outer web of the first primary lead-grey; inner webs of all the primaries light grey, almost white; secondaries, tertials, scapulars, and small wing-coverts tipped with white; upper tail-coverts and tail-feathers white, the three long tail-feathers on each side with outer webs of slate-grey; throat, breast, and all the under surface of the body and wings at this age nearly pure white; legs, toes, and membranes orange. Up to October all the upper parts are more or less barred with brownish-grey, which wears off with increasing age, and by the following July, just previous to the moult, the black bill, the white forehead, the dark bar on the carpals, and the shorter tail-streamers are almost the only signs of immaturity.

The downy nestling when a few days old is rather less buff and more greyish than the Common Tern, and there is less black on the throat: otherwise there is little difference.



STERNA MINUTA, Linnæus.*

THE LESSER TERN.

Sterna minuta.

THIS bird, the smallest of the British Terns, is not uncommon during summer on such parts of the coast of the British Islands as are suited to its habits. It appears to prefer low flat shores, or islets, of sand, broken shells, or small shingle, coming here in May, and laying two or three eggs before the end of that month in a small depression scraped in the ground above high-water mark. The Author found considerable numbers of this Tern at the mouth of the Thames, on the Kentish side, about Yantlet Island and the creek of the same name close by. When their breeding-haunts are visited, they exhibit but little fear, settling on the ground not far from those who may be looking for their eggs or young, and will frequently walk about

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[*] Syst. Nat. Ed. 12, i. p. 228 (1766).

with a light step, or with a piping note again take wing. They fly with rapid beats of their long pinions, and from this circumstance look much larger in the air than when in the hand. Their food consists of the fry of surface-swimming fish, and small crustacea, upon which they descend from the air, and they are frequently seen to alight on the water, sometimes evidently seeking food on the surface, and at others only resting from their labours. Their note is a sharp *pirre.*

The eggs are of a stone-colour, spotted and speckled with ash-grey and dark chestnut-brown; average measurements 1·35 by ·95 in. The young are generally able to fly by the end of the second week in July; and, usually, both old and young leave this country about the end of September, but the Author had a note of one seen on the 10th of October, 1839, and he received a notice from the Rev. William Howman of one that was exposed for sale in Norwich market, in the third week of the month of December.

This species visits many different places along the line of the southern coast from Cornwall to Sussex. It breeds on the shores of Essex, Suffolk, and Norfolk; near Skegness in Lincolnshire; and on Spurn Point in Yorkshire; but the small colony which bred in Selby's time on the main land near Holy Island in Northumberland, no longer exists.

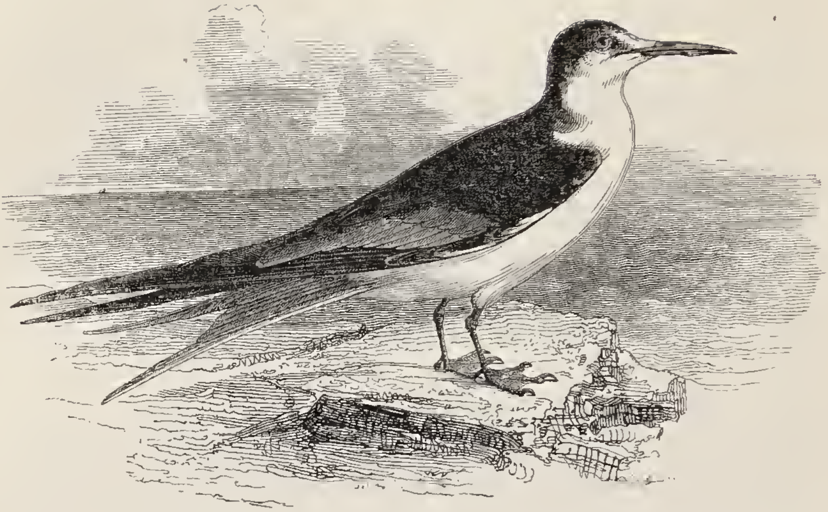
On the east coast of Scotland colonies are to be found from Haddington to Sutherland; and its summer range is said to extend to the Orkneys. On the west side it nests in several localities, both inland, as on Loch Lomond, and on the coast, down to the Solway; and, continuing the line, we find it breeding in Cumberland, Lancashire, and in suitable places in Wales. In Ireland it is of tolerably general distribution along the coast, and on the fresh-water loughs, although nowhere abundant. Mr. R. Warren informs the Editor that he has an egg of a clutch taken a few years ago at the end of the North Wall, Dublin—a remarkable situation for a nest of this species.

The northern range of the Lesser Tern can scarcely be traced beyond the southern portions of Norway, Sweden, and Finland; nor does it occur far north in Russia. It is common on the southern shores and islands of the Baltic; and it ascends the larger rivers for so great a distance—breeding on the islands and sandbanks—that its range may be said to extend across Europe. Colonies are to be found along the entire coast from North Germany to Spain; and also throughout the Mediterranean, the Black Sea, and the Caspian. It goes down to the West Coast of Africa to Cape Colony; and in the north-east, it is found breeding in Lower Egypt, and, perhaps, in the Red Sea. Eastward it can be traced along the Asian plateau to Northern and Central India; but beyond this point its range and identification are complicated by closely allied forms. One of these, which is characterized by a grey rump and tail and straight slender bill, is found from the Red Sea to Ceylon; and another, *S. sinensis*, recognizable by its slightly larger size and *white* primary shafts, extends from Ceylon, Burmah, and the Eastern Archipelago, to China on the one hand, and North Australia on the other. In North America our Lesser Tern is represented by a very closely allied form, *S. antillarum*, in which the rump and tail are grey like the mantle, and there is, as a rule, but little black at the tip of the bill; the primary shafts are, however, black, as in our bird. On the eastern side of South America, ascending the great rivers for thousands of miles, *S. superciliaris*, with stout and entirely yellow bill, is the representative species; and in the Australian and New Zealand Seas is found *S. nereis*, a light-mantled species destitute of the black loral streak. The Pacific coast of South America is frequented by *S. exilis*, a slender grey species with white frontlet; and at the Cape of Good Hope there is a very small species, *S. balænarum*, in which the black of the forehead extends to the base of the bill.

In the adult bird in summer the beak is orange, tipped with black; irides dusky; forehead white, crown of the head and the nape jet black; back and wings uniform delicate pearl-grey, except the first and second primaries, which are slate-grey with black shafts and white margins to the inner webs; upper tail-coverts and tail-feathers white, tail forked; chin, throat, sides of neck, breast, and all the under surface of the body pure white; legs, toes, and membranes orange. The whole length of the bird is rather more than eight inches; from the carpal joint to the end of the wing six inches and three-quarters. The adult bird in winter only varies in having the head dull black, instead of deep black.

The young bird of the year, as figured, has the point of the bill dark brown, the base pale brown; forehead and crown mottled with dusky-brown and greyish-white, more uniform in colour on the nape, and darker; back, wing-coverts, and tertials ash-grey, margined with dusky-black; primaries slate-grey, margins of the inner webs white; secondaries ash-grey; tail-feathers greyish-white spotted with dusky-grey towards the ends; chin, sides of neck, breast, and all the under surface white; legs pale brown. The black loral streak, which is at first absent or only indicated by a faint grey line, is assumed the second year.

The nestling is of a stone-buff on the upper parts, sprinkled with grey, and spotted with black on the head; under parts dull white.



STERNA FULIGINOSA, Gmelin.*

THE SOOTY TERN.

Sterna fuliginosa.

By the kindness of Mr. H. W. Desvœux, of Drakelow Hall, the Author was enabled to exhibit at a meeting of the Linnean Society in February, 1853, a well-preserved specimen of the Sooty Tern, *Sterna fuliginosa* of authors. This bird was stated to have been shot in October, 1852, at Tutbury, near Burton-on-Trent, and having been purchased by Mr. Desvœux for his collection, the figure here given was taken from it. A second occurrence of this rare straggler was recorded by Mr. J. E. Harting, who stated in 'The Field,' 26th June, 1869, that he examined *in the flesh* a specimen shot on the 21st June, near Wallingford in Berkshire, and now in the possession of Mr. Franklyn. Other so-called examples have proved upon examination to be specimens of the Black Tern.

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* Syst. Nat. i. p. 605 (1788). Wagler made this single species the type of no less than three genera, *Onychoprion*, *Planetis*, and *Haliplana;* there does not, however, appear to be any sufficient structural difference to warrant its separation from *Sterna.*

On the Continent, this inter-tropical species has been noticed on three occasions. Naumann states that one was obtained near Magdeburg; Degland and Gerbe mention an adult male, now in the Lille Museum, taken alive but exhausted, near Verdun, on the 15th of June, 1854; and one, now in the Museum at Florence, was captured on the 28th October, 1862, in a net set for trout in a torrent in Piedmont (Ibis, 1881, p. 218).

The Sooty Tern has been known to occur about a dozen times so far north as the New England States, but it is only on the warmer portions of the American coast that it becomes in any way abundant. It breeds on the Bahamas; and on many of the Cays off the coast of Florida, especially the Tortugas, and Audubon has given a graphic description of the swarms he found there. Other breeding-places are scattered amongst the West Indian Islands; and in the Pacific the species appears to go as far south as Chili, and to straggle as far north as Japan and the Aleutian Islands. Its range extends throughout Polynesia—where suitable breeding localities are numerous—to the coasts of Australia, along which it is of general distribution; Gilbert found it breeding on Houtman's Abrolhos in December, Macgillivray obtained eggs in Torres Straits in May and June; and Raine's Island in the Great Barrier Reef is another well-known station. It occurs throughout the Eastern Archipelago; visits the coasts of India and Ceylon; and Mr. Hume found it breeding in the Laccadives in the middle of February, by which date most of the eggs were hatched. It is generally distributed throughout the Indian Ocean, from Madagascar and the neighbouring islands to the east coast of Africa and the Mekran shores, and it has several breeding-places in the Red Sea. On the western side of Africa it breeds in limited numbers at St. Helena, but the best known, and probably the largest assemblage, is the one which takes place at different seasons in the Island of Ascension. Dr. C. Collingwood (Zool. s.s. p. 979), and the late Commander Rowland M. Sperling (Ibis, 1868, p. 268), have given excellent accounts of their visits to the 'Wide-awake Fairs,' as the colonies are called, and their narratives have been supplemented by the observations of Mr. D. Gill, F.R.A.S., and Sergeant-major Unwin, R.M., in a paper by Mr. F. G. Penrose (Ibis, 1879, p. 277). There are three colonies or ‘fairs’; and it would appear that the birds arrive at very uncertain intervals. In 1875, as Mr. Unwin informed the Editor, the birds remained months longer than usual, owing to an unseasonable downpour of rain which flooded the breeding-grounds and killed thousands of young; the birds then left about May and were back in August. In 1877 they made their first appearance in October, and fresh arrivals were noticed for the next two months. The name ‘Wide-awake’ is supposed to express their noisy cawing cry.

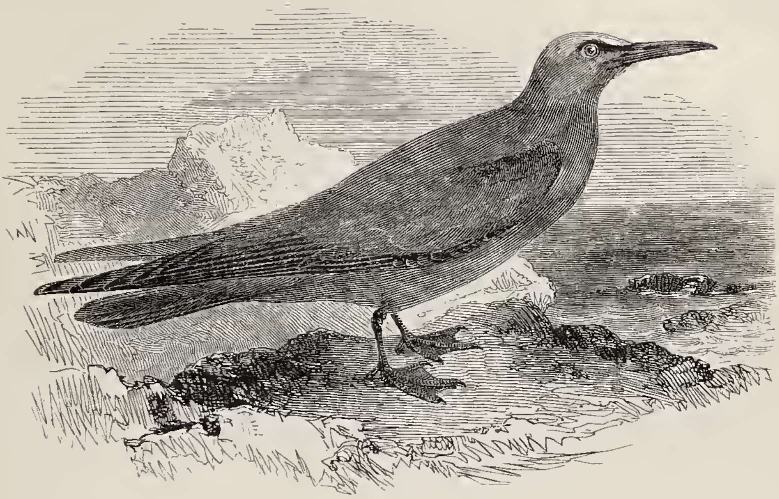
Audubon, speaking of the Tortugas, says:—“The Sooty Tern never forms a nest of any sort, but deposits its three eggs in a slight cavity which it scoops in the sand under the trees. Several individuals which had not commenced laying their eggs, I saw scratch the sand with their feet, in the manner of the common fowl, while searching for food. In the course of this operation they frequently seated themselves in the shallow basin to try how it fitted their form, or find out what was still wanted to ensure their comfort.” Gilbert, as quoted in Gould's ‘Birds of Australia,’ expressly states that each bird limits itself to the incubation of a single egg, and so say all the authorities on the Ascension breeding-places; nevertheless, the Editor has a photograph of the principal ‘fair,’ in which two eggs are shown side by side in the same hollow; and Mr. Hume's experience at the Laccadives is, that two and three eggs are a usual number. At Ascension the eggs are so constantly taken for eating,—200 dozen being sometimes collected in a morning,—that the natural complement can hardly be ascertained with certainty, especially as it is well known that the same bird will, if robbed, lay several times. The eggs measure on the average 2 by 1·5 in.; they are of a pale cream ground-colour; sometimes with a bluish tint, blotched with purplish-brown and chestnut-red; the shell is smooth, in which respect it differs strikingly from the egg of the Noddy, a bird often found breeding in the same localities—in which the shell is of a rough calcareous nature. The yolk of the egg of the Sooty Tern is of a rich saffron-yellow.

As soon as the young can fly, both they and their parents go away to sea. Their power of sustained flight is very great, and even when catering for the young the old birds must travel great distances, for Mr. Gill caught a bird with his hand, with a small fish in its beak of a species quite foreign to Ascension waters.

In the adult the beak is black; the forehead white, ending in a concave curve with a point over each eye; a black streak from the base of the bill to the eye; top and sides of the head, occiput and nape, black; upper surface of the body and wings brownish sooty-black; tail deeply forked, of the same dark colour as the back, except the outer webs and basal portions of the outside tail-feathers, which are white; chin, cheeks, sides and front of the neck, breast, belly, under surface of the wings, under parts of the body, under tail-coverts, and base of the tail-feathers, white; under surface of the lengthened portion of the tail-feathers ash-grey; legs, toes, and inter-digital membranes, which extend to the extremities, black. The whole length of the bird is about sixteen inches; wing, from flexure, eleven inches. In birds which are not fully adult the outer webs of the long tail-feathers are more or less umber-brown.

In the immature bird the plumage is of a nearly uniform sooty-brown, lighter on the under wing-coverts; and the feathers of the upper parts are tipped with white; bill and legs dark brown. The young in down, of a few days old, is brownish-grey above and white on the under parts; but brown feathers soon make their appearance on the flanks, and extend over the entire breast and abdomen; the feathers of the back are then blackish-brown, broadly tipped with white.

THE SMALLER SOOTY TERN, *Sterna anæstheta*, Scopoli, frequently known as *Sterna panayensis*, is believed by the Editor to have straggled to one of the lightships at the mouth of the Thames, in September 1875. Both Mr. Bidwell, in whose collection the specimen now is, and the Editor, interviewed the local bird-stuffer, who stated that he mounted it 'from the flesh,' and they were convinced of the truth of his assertion; the evidence is not, however, sufficiently perfect to warrant the introduction of this species as a British bird. Details are given in 'The Zoologist' for 1877 (p. 213). In case the Smaller Sooty Tern should again wander to our coasts, it may be distinguished from the Sooty Tern by its somewhat smaller size, more prolonged white eye-streak, paler and ash-brown upper parts, and less perfectly webbed feet. Its geographical range is nearly identical with that of its larger congener, but the two species are rarely, if ever, found breeding in close proximity. There is a third species, *Sterna lunata*, Peale, characterized by slate-grey upper parts, which appears to be restricted to Polynesia; and *Sterna aleutica* of the Aleutian Islands and Alaska, which has the head-pattern of the Sooty Terns, with the long white tail of the Arctic and other typical species, forms an interesting link between the two groups.



Anous stolidus (Linnæus*).

THE NODDY TERN.

Sterna stolida.

Anoüs, *Stephens* ex *Leach M.S.*†—Bill longer than the head, rather slender, with the culmen gradually decurved to the tip, which is acute, the lateral margin slightly curved; the gonys well angulated; nostrils lateral, basal, placed near the middle of the bill, and longitudinal. Wings long and pointed, the first quill-feather slightly the longest. Tail long and cuneate, and slightly emarginate. Tarsi rather short; the three front toes united by a full web; hind toe small; claws strong and curved.

Two examples of this inter-tropical Tern were recorded by the late William Thompson (Mag. Zool. & Bot. i. p. 459) as having been obtained between the Tusker Lighthouse off the coast of Wexford, and Dublin Bay. They were said to have been taken in the summer about four years previous to 1834, by the captain of a vessel who brought them to Mr. William Massey, of the Pigeon House, a name associated with the capture of several of the rarest Irish birds; and one of these examples is now in the Science and Art

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* *Sterna stolida,* Linnæus, Syst. Nat. Ed. 12, i. p. 227 (1766).

† Shaw's General Zoology, xiii. pt. i. p. 139 (1826).

Museum, Dublin. Thereupon Mr. Thos. Austin (Ann. & Mag. Nat. Hist. ix. 1842, p. 435) stated that the 'Black Noddy' was a summer visitor to St. George's Channel, but owing to its extreme shyness and the rapidity of its flight, he had never been able to obtain a specimen; as, however, he speaks of it as robbing the other Terns, it seems not improbable that his 'Noddy' was an Arctic Skua. With the exception of the first, there is no other record worthy of consideration, of the capture or even the occurrence of the Noddy on the coasts or islands belonging to Europe.*

The Noddy is, like the Sooty Tern, of general distribution throughout the tropics. Its best known breeding-grounds are in the Tortugas off the coast of Florida, on the Bahamas, and on many of the Cays and along the coasts of the West Indies and tropical America on both sides. In the Atlantic it was found residing so far south as the storm-beaten Inaccessible Island, off Tristan d'Acunha, by the 'Challenger' Expedition; and in the Pacific it is said to visit Chili, and to straggle to New Zealand. On the islands and coasts of Polynesia and Australia, it is found breeding in the same localities as those already mentioned when treating of the Sooty Tern; and, like that species, it occurs throughout the Indian and African seas, breeding on the Laccadives, on the Red Sea islands, St. Helena, Ascension, and other localities.

Audubon gives the following account of the habits of this species:—"About the beginning of May the Noddies collect from all parts of the Gulf of Mexico and the coasts of Florida, for the purpose of returning to their breeding-places on one of the Tortugas called Noddy Key. These birds form regular nests of twigs and dry grass, which they place on the bushes or low trees, but never on the ground. On visiting their island on the 11th of May, 1832, I was surprised to see that many of them were repairing and augmenting nests that had remained through the winter, while others were employed in constructing new ones, and some were already sitting on their eggs. In a great many instances, the repaired nests formed masses nearly two feet in height, and yet all of them had only a slight hollow for the eggs, broken shells of which were found among the entire ones, as if they had been purposely placed there. The birds did not discontinue their labours, although there were nine or ten of us walking among the bushes, and when we had gone a few yards into the thicket, thousands of them flew quite low over us, some at times coming so close as to enable us to catch a few of them with the hand. On one side might be seen a Noddy carrying a stick in its bill, or a bird picking up something from the ground to add to its nest; on the other, several were seen sitting on their eggs unconscious of danger, while their mates brought them food. The greater part rose on wing as we advanced, but re-alighted as soon as we had passed. The bushes were rarely taller than ourselves, so that we could easily see the eggs in the nests. This was quite a new sight to me, and not less pleasing than unexpected. At the approach of a boat, the Noddies never flew off their island, in the manner of the Sooty Terns. They appeared to go farther out to sea than those birds in search of their food, which consists of fishes mostly caught amid the floating seaweeds, these Terns seizing them, not by plunging perpendicularly downwards, as other species do, but by skimming close over the surface in the manner of Gulls, and also by alighting and swimming round the edges of the weeds. This I had abundant opportunities of seeing while on the Gulf of Mexico. The flight of this bird greatly resembles that of the Night-hawk when passing over meadows or rivers. When about to alight on the water, the Noddy keeps its wings extended upwards and touches it first with its feet. It swims with considerable buoyancy and grace, and at times immerses its head to seize on a fish. It does not see well by night, and it is for this reason that it frequently alights on the spars of vessels, where it sleeps so soundly that the seamen often catch them. When seized in the hand it utters a rough cry, not unlike that of a young American Crow taken from the nest. On such occasions it bites severely, with quickly-repeated movements of the bill, which, on missing the object aimed at, closes with a snap. Some which I kept several days refused all kinds of food, became dull and languid, and at length died. While hovering over us near their nests, these birds emitted a low querulous murmur, and, if unmolested, would attempt to alight on our heads. After a few visits, however, they became rather more careful of themselves, although the sitting birds often suffered us to put a hat over them. This species incubates both day and night."

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* Mr. H. Blake-Knox writing of the coast of Dublin, says of this species, "Has occurred to myself" (Zool. s.s. p. 307); whatever that may mean.

The following extract in reference to the habits of this bird in Australia forms part of a letter from the late Mr. Gilbert, who was collecting for Mr. Gould in Western Australia :—

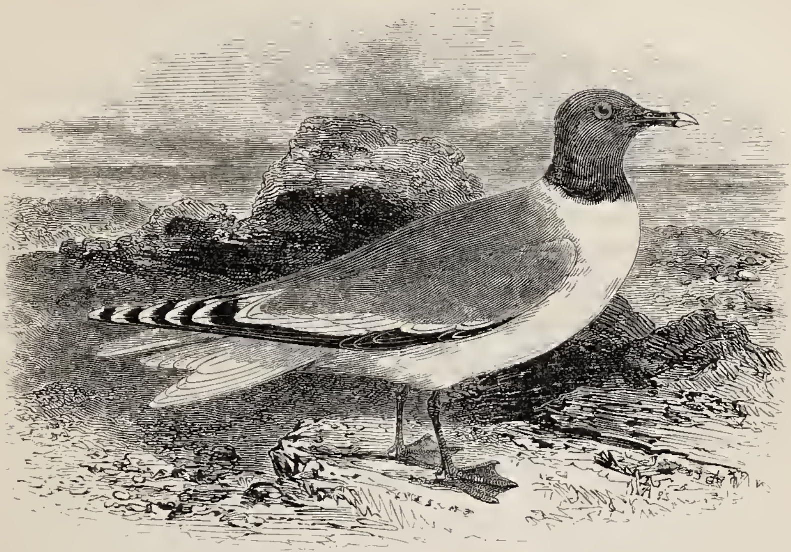
"The Noddy and its allied species are the most numerous of all the inhabitants of the Houtmann's Abrolhos, breeding in prodigious numbers; the bird lays in November and December, forming a nest of sea-weed about six inches in diameter, and varying in height from four to eight inches, but without anything like regularity of form; the top is nearly flat, there being but a very slight hollow to prevent the egg rolling off. The nests are so completely plastered with their excrement, that at first sight it appears to be almost the only material; they are either placed on the ground, in a clear open space, or on the tops of the thick scrub, over the *Sterna fuliginosa*: these two species incubate together in the utmost harmony, the bushes to an immense extent wearing a mottled appearance, from the great mass of birds of both species perched on the top, the male *Sterna fuliginosa* sitting quite close to the nest of the Noddy, while its mate is beneath, performing her arduous duties of incubation. On walking among these birds' nests, I was surprised to observe the extreme tenacity with which they kept their post; in fact they would not remove off the egg or young, but suffered themselves to be fairly trod upon, or taken off by the hand; and so thickly were these nests placed, that it was no easy matter to avoid crushing either birds or eggs at every step. In the middle of January I found the eggs very nearly ready to hatch, and but few young birds; in numerous instances the bird would suffer me to take it by the wing and throw it off the nest, but would immediately return, although I was still standing close to the spot. There would be an overwhelming increase of this species yearly but for one check which nature has provided against it in the presence of a lizard, which is extremely abundant about their breeding-places, and which finds an easy prey in this and *S. fuliginosa*. I am satisfied, from constant observation, that, on an average, not more than one out of every twenty birds hatched ever reach maturity, or live long enough to take wing; besides this, great numbers of the old birds are constantly killed: these lizards do not eat the whole bird, but merely extract the brains and vertebral marrow; the remainder, however, is soon cleared off by the *Dermestes lardarius*, which is here in amazing numbers, and gave me a great deal of uneasiness and constant trouble to preserve my collection from their repeated attacks. I did not observe the Noddy inhabiting any other but South Island; they do not appear to go far out to sea to feed, finding an abundance of food immediately outside the outer reef; nor did I in any one instance observe it feeding in the smooth quiet water between the outer reef and the islands. Their food consists of small fish, small mollusca, medusæ, cuttle-fish, &c.''

Audubon states that this species, like the Sooty Tern, lays three eggs, but other authorities state that each female lays and incubates a single egg. A nest is not invariably constructed, and at times the solitary egg is laid in any convenient depression or crevice of the rock or coral-reef. The egg is of a dull ruddy-white or buff, rather rough in texture, sparingly spotted and scrolled with reddish-brown; average measurements 2 by 1·4 in.

In the adult bird the bill is black; from the base of the bill to the eye is also black; irides brown; the forehead and crown grey; occiput smoke-grey; the throat dark lead-grey; the body above and below and all the wing-coverts, dark coffee-brown; primaries and tail-feathers brownish-black; legs and toes reddish-brown; membranes yellow, varying in brilliancy according to age and season; claws black. The whole length of the specimen here figured and described fourteen inches and a half to the end of the tail; the wing, from the carpal joint to the end of the first quill-feather eleven inches. Males are rather larger and brighter in colour than the females.

In birds which are not fully mature, the black loral streaks are less defined; the grey of the forehead and throat is less pronounced, and the general tint is browner. Birds of the first year have very little white on the forehead; the mantle and wing-coverts are of a lighter brown, the secondaries and tail-feathers showing slight bars of umber-brown near the tips; under parts pale brown.

The Editor considers that there is only one species of large Noddy, to which about a dozen different specific names have been applied; Mr. R. B. Sharpe distinguishes in addition to the above:—*Anous superciliosus* of the coast of Central America and the Antilles; *A. plumbeigularis* of the Red Sea; and *A. galapagensis* of the Galapagos Archipelago (Phil. Trans. clxviii. pp. 463–469). The genus also contains two very distinct and smaller species:—*A. melanogenys* and *A. tenuirostris*, the former having a wide intertropical range; the latter restricted, so far as is known, to the district between the Red Sea and Australia; and a doubtfully distinct species, *A. leucocapillus*, occurs in Australian and Polynesian waters. There are also two small and very closely-allied grey-mantled species:—*A. cæruleus* of the tropical Pacific, and *A. cinereus* of Eastern Australasia.



XEMA SABINII (J. Sabine [*]).

SABINE'S GULL.

Larus Sabini.

XEMA, *Leach* [†].—Bill rather shorter than the head, moderately stout, the upper mandible decurved from beyond the nostrils to the tip, the gonys angulated and advancing upwards; nostrils basal, lateral, linear. Legs moderately long; the lower part of the tibiæ bare for some distance; tarsi tolerably strong; three toes in front entirely palmated, hind toe small, elevated. Wings long, the first quill-feather the longest. *Tail distinctly forked.*

THE prominent angle at the symphisis of the under mandible; the extent of the palmated membrane between the toes, and the almost square tail observed, more or less, in some of the Terns, indicate a degree of connection with the Gulls; and the Gull here first inserted, by its forked tail, exhibits one point of resemblance to the greater number of the Terns. Like them, some of the smaller Gulls assume during the breeding-season a dark-coloured head.

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[*] *Larus Sabini,* Joseph Sabine, Trans. Linn. Soc. xii. p. 520, pl. xxix. (1818).

[†] XEMA, Leach; J. Ross, in Ross's Voy. App. ii. p. lvii. (1819). The genus has been improperly made, by others, to include the small hooded species, and also some of those without hoods.

Most of the species of the sub-family *Larinæ*, or Gulls, have a wide geographical range; some of them frequenting the sea-coast, whilst others also visit inland lakes, rivers, and marshes. As a family they are practically omnivorous, living on fish, alive or dead, any animal matter that is cast up by the tide, eggs of other birds, insects, grain, and other vegetable substances. The young differ from the adult birds in plumage, and seldom associate with them at the nesting-place during the breeding-season. The sexes do not differ in plumage; but the males are generally larger than the females; sometimes considerably so.

Sabine's Gull was added to the British Fauna by the late Wm. Thompson, of Belfast, to whom we are indebted for a description of the plumage of the young bird in its first autumn dress. The first specimen was shot in Belfast Bay, in September, 1822, and was presented to the Natural History Society of Belfast for the museum, in 1833; and in the Museum of the Royal Dublin Society, Mr. Thompson subsequently pointed out a second example of this Gull, also in the plumage of the first autumn, which was shot in Dublin Bay by Mr. Wall, the curator. Attention having been drawn to the characteristics of this species, it was found to be a not unfrequent, although somewhat irregular, visitor to the shores of the British Islands. In almost every instance the occurrences have taken place in the months of August, September, and October,—the exception being one near Brighton in December,—and the specimens obtained have been, almost invariably, young birds of the year. Mr. Harting's valuable 'Handbook of British Birds' (p. 171), contains a record of upwards of twenty captures previous to 1872, and during the subsequent twelve years so many more have been recorded that the instances are too numerous for mention in detail. Suffice it to say that examples of this species have been obtained twice or thrice in Cornwall; twice in Devonshire; twice in Somersetshire; six times in Sussex; twice on the

Thames, near Barking Creek; once inland, in Cambridgeshire; once in Norfolk; one picked up starved near Shrewsbury; six times in Yorkshire; once near North Berwick; once in Banffshire; once on the island of Mull; once at Milford Haven, in Wales; and nine or ten times in Ireland. The exceptions to the rule that the visitors are immature birds, are: one adult in full summer plumage, Bridlington, Yorkshire, August 10th, 1872 (Zool. s.s. 3316); and, so recently as the 8th of September, 1883, one with full slate-coloured hood and ring, killed at Loch Spelvie, Mull, by the Rev. F. W. Champneys.

This species of Gull was first described (Trans. Linn. Soc. xii. p. 520), by the late Joseph Sabine, from specimens sent by his brother, Captain (afterwards Sir Edward) Sabine, who accompanied the expedition of 1818 in search of a North-West Passage. The account of these birds was that "they were met with by Captain Sabine, and killed by him on the 25th of July, 1818, on a group of three rocky islands, each about a mile across, on the west coast of Greenland, twenty miles distant from the mainland in latitude 75° 29′ N., and longitude 60° 9′ W. They were associated in considerable numbers with Arctic Terns, breeding on those islands, the nests of both birds being intermingled. This Gull lays two eggs on the bare ground; these are hatched the last week in July; the young are mottled at first with brown and dull yellow. The eggs are an inch and a half in length, and of regular shape, not much pointed; the colour is olive, blotched with brown. The parent birds flew with impetuosity towards persons approaching their nests and young; and when one bird of a pair was killed, its mate, though frequently fired at, continued on wing close to the spot where it lay. They get their food on the sea-beach, standing near the water's edge and picking up the marine insects which are cast on shore."

During Parry's second Arctic voyage a bird of this species was seen in Prince Regent's Inlet; afterwards many specimens were obtained on Melville Peninsula; and it was observed at Boothia Felix. Birds and one egg were obtained at Cambridge Bay in June, 1853 (Zool. 1879, p. 8). On the 8th August, 1848, Richardson had found a nesting-place, around which the parent birds and their spotted young were flying, on an island off Cape Dalhousie, in about 130° long. W., near the estuary of the Mackenzie River; subsequently MacFarlane obtained many eggs for the Smithsonian Institution along the Arctic coast about Anderson and Franklin Rivers; and this Gull is now known to breed plentifully in the marshes of Alaska. It is common on the opposite shores of Eastern Siberia; the 'Vega' obtained it in Bering Straits; and Middendorff found it breeding abundantly, in company with the Arctic Tern, on the Taimyr peninsula in 74½° N. lat. It has not been obtained on Novaya Zemlya, nor on Franz-Josef Land; but Sabine told Richardson that he shot two on Spitsbergen, and the latter says the bird brought home was in full breeding-plumage.

On the autumn migration examples of Sabine's Gull, mostly young birds, visit the islands and northern shores of the German Ocean, and also those of the north-west of France; the Editor has examined a fine adult, still in breeding-plumage, shot off Brittany on the 25th August, 1872. In America, its recorded range on migration is down to New York on the east; also to the Bermudas; and to Great Salt Lake, Utah, on the western side of the Rocky Mountains; an example has been obtained at Tumbes, and two specimens in nearly adult winter plumage, shot near Callao, Peru, in 12° lat. S., have been presented to the Editor by Capt. A. H. Markham, R.N. This extension of its range in the Pacific is of great interest, as it there overlaps the area of the only other representative of the genus, *Xema furcatum*, a much larger species, of great rarity, the third existing example having recently been obtained on the coast of Peru, by Capt. Markham (P. Z. S. 1882, p. 523).

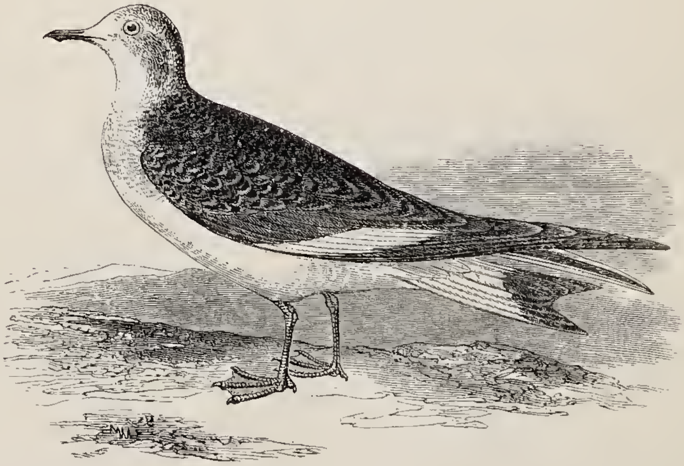
The downy nestling and the egg of Sabine's Gull were first described and figured by Middendorff (Sib. Reise, ii. p. 245, pl. xxiv.). Eggs obtained by MacFarlane, one of which has been figured by Prof. Newton (P. Z. S. 1871, p. 57, pl. iv. fig. 5), are of a dull brownish-olive, with faint brown blotches and scrawls at the larger end; measurements 1·7 by 1·3 in.

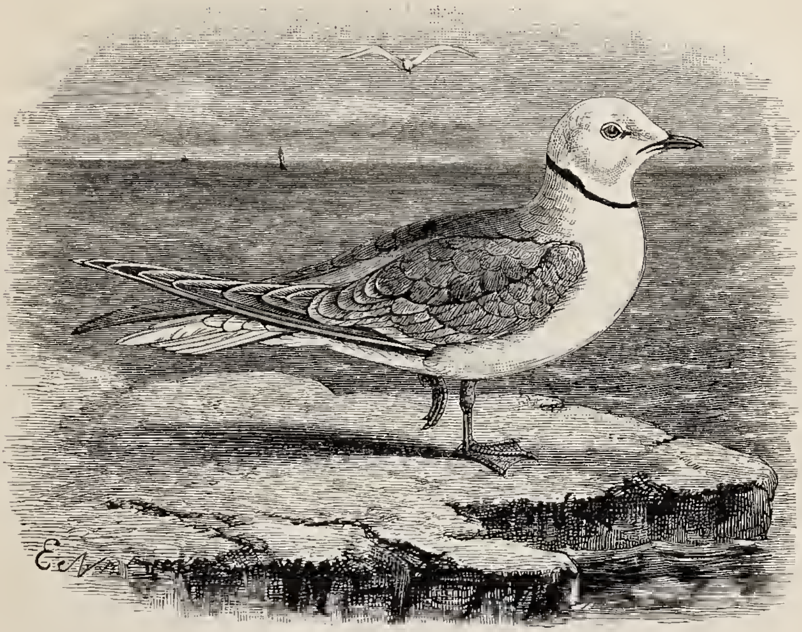
The adult in summer plumage has the bill one inch long, the base of both mandibles black, as far as the angular projection of the lower mandible, the remainder yellow; the inside of the mouth bright vermilion. The irides dark, surrounded by a naked circle of the same colour as the inside of the mouth; a small white speck beneath the eye scarcely perceptible. The whole of the head and upper part of the neck a dark lead-colour, terminating in a narrow black collar; the remainder of the neck behind and before, as well as the breast and belly, pure white. The back, scapulars, and wing-coverts are ash-coloured, much lighter than the head; the lower ends of the scapulars are tipped with white. The shafts and outer webs of the first five primary quill-feathers are black, the edge of their inner webs white to within an inch and a half of the tips, the white sometimes continued to the tip; the tips of the first and second of these quill-feathers white in old birds; the tips of the third, fourth, and fifth white, giving the wing when closed a spotted appearance; the sixth primary has the web principally white; the upper primaries, secondaries, and the whole under parts of the wings, white. The legs, feet, and claws reddish-black; the thigh feathered to within three-eighths of an inch of the knee: the tail with its upper and under coverts white; the outer tail-feathers narrower and about one inch longer than those in the middle. Total length thirteen inches; wing, from the wrist ten inches and three-quarters.

Two examples in their second year obtained in Callao Bay, Peru, in December 1881, have the forehead and crown white; an irregular and rather broad dark band or patch on the nape where the collar joins the hood in the adult; the white tips of the primaries are abruptly abraded, as if cut off with scissors, giving the lower part of the wing a uniform black appearance; legs and feet clay-brown; mantle, tail, under-parts and bill, as in the adult.

Thompson's description of the autumnal plumage of the young bird of the first year is, "the forehead, space immediately above the eye, and between it and the bill, (with the exception of the narrow line of greyish-black closely encircling the front and lower part of the eye,) upper part of the throat, and sides of the neck, are white; crown, nape, and back of the neck, blackish-grey; back, scapulars, greater and lesser wing-coverts, blackish-grey, tinged with yellowish-brown, the extremity of every feather varying from greyish-white to white, as it approaches the tail; under part of the throat, and upper part of the breast, pale ash-colour; lower breast and all the under plumage, white; shafts of the first six primaries brownish-black at base, becoming gradually darker towards the extremity, where they are black in the first three, but in the fourth, fifth, and sixth assimilate in colour to the feather at that part, which is white; the entire of the outer webs of the first five black; the inner webs with a broad edging of white, to within from one to two inches of the end, which part is black in the first three, but tipped with white in the fourth and fifth; in the sixth the inner web is white, the outer black, excepting for three or four lines from the tip, where it is white, and again at about an inch from the end where a white spot of an oval form appears. Feathers of the tail white, with black tips."

The representation below is that of a young bird in the plumage of its first autumn.





RHODOSTETHIA ROSEA, Macgillivray.*

THE CUNEATE-TAILED GULL.

Larus Rossii.

RHODOSTETHIA, *Macgillivray*†.—Bill short, rather slender, the upper mandible decurved towards the tip, the lower mandible with the intercrural space narrow, the knob slight, the dorsal line concave, and the tip narrow. Wings long, pointed, the first quill-feather the longest. Tail cuneate, the central feathers much longer than the lateral ones; legs rather short, the tibia bare for a short distance; tarsus anteriorly scutellate, rough posteriorly; hind toe very distinct, with a large curved claw; the three anterior toes entirely webbed; claws rather large, and curved.

FOR the statement of the occurrence of this very rare Gull in Yorkshire, and its consequent admission in a History of British Birds, we are indebted to Mr. Charlesworth, who states (Pr. Yorks. Phil. Soc. i. p. 33, 1847) that he was shown the specimen, said by Graham, a bird-stuffer of York, to have been shot near Tadcaster, and with the permission of its then owner, and of Mr. (later Sir Wm. M. E.) Milner, of Nun Appleton, who afterwards purchased it, he sent it for the Author's inspection. Sir W. Milner's version, presumably derived from Graham, is that the bird was killed on the 22nd December, 1846, by a Mr. Saxton, of Aberford (Zool. p. 1694); but the following details were supplied by Mr. Henry Milner (Zool. p. 1784):—"Ross's Gull was killed by Horner, Lord Howden's head-keeper, in February, 1847, in a ploughed field, near the hamlet of Milford-cum-Kirby, in the parish of Kirby. Its flight resembled, according to Horner's account, the flight of any other Gull, and it did not seem at all shy." This specimen, which is in winter plumage, and is now in the Leeds Museum, has, in the opinion of several persons who have examined it, the appearance of having been mounted from a relaxed skin and not from 'the flesh'; the dates assigned are, however, consistent with the absence of the black collar; and as one straggler of this species has occurred in the Færoes, and another in Heligoland, there is no inherent improbability of its having been obtained in Yorkshire. Macgillivray had already included this bird in his Manual of British Ornithology, vol. ii. p. 254 (1842), with the remark that "this species has once occurred in Ireland," but of this there is no corroborative evidence.*

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* *Larus roseus,* Macgillivray, Mem. Wern. Soc. v. pt. i. p. 249 (1824); description of one of the two specimens obtained on Melville Peninsula.

† Manual of British Ornithology, Pt. ii. p. 252 (1842).

The two first examples of this rare Arctic Gull were obtained on the 23rd and 27th June, 1823, on Parry's second voyage, at Alagnak, Melville Peninsula, 69° 30′ N. lat., and the species was named by Richardson after its discoverer, Mr., afterwards Sir James C. Ross; but in the matter of nomenclature he had been anticipated by Macgillivray. One of these specimens is in the Edinburgh Museum; the other, which was given to the late Mr. J. Sabine, is probably the one which is now in the Derby Museum at Liverpool.

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* A Mr. J. B. Ellmann has stated that an adult male was shot and presented to him by his friend Mr. Vidler of Pevensey, and this bare assertion, unaccompanied by any details, was inserted in 'The Zoologist,' p. 3388.

The species was also observed at Felix Harbour, Boothia. Ross, in his Zoological Appendix to Sir Edward Parry's narrative of his adventurous boat-voyage towards the Pole, relates that several were seen during the journey over the ice north of Spitsbergen, and that Lieutenant Forster also found the species in Waygatz (*i.e.* Hinlopen) Strait—not to be confounded with Waigatz Island to the south of Novaya Zemlya—but specimens were not obtained. Professor Malmgren, who did not meet with it at Spitsbergen, has expressed his doubts as to the correctness of the identification, but upon this point the testimony of Ross and Parry, who certainly knew this Gull better than any men then living, is clear. In Parry's Narrative (p. 81) the words are, "We saw in the course of this journey [13th July, 1827, lat. 82° 17′ N.] one of the very beautiful gulls first discovered by Lieut. Ross at Arlagnuk [*sic*] in our voyage of 1823, and named in compliment to him *Larus Rossii.*" On 16th July, lat. 82° 26′ N., "We saw during the last journey a second Ross gull" (p. 87); and again, on their return, August 2nd, in 82° 6′ N. lat., 17° 45′ E. long.—"We saw five or six birds, amongst others two Ross gulls, during this journey" (p. 110). It is impossible to throw over such evidence merely because later visitors to Spitsbergen have not observed the species; and the correctness of these distinguished Arctic explorers is confirmed by the fact that the Austro-Hungarian expedition obtained a specimen off the newly-discovered Franz-Josef Land, although it was lost when the 'Tegetthoff' was abandoned. Nordenskiöld's expedition obtained a bird of the second year on the 1st July, 1879, just before the 'Vega' was freed from her winter quarters off the Chukch Peninsula; and Mr. Newcomb, of the ill-fated 'Jeannette,' shot no less than eight specimens off North-eastern Siberia, after the middle of October, 1879. Three of these, together with a bird in the spotted plumage of the first year, shot in October near St. Michael's, Alaska, by Mr. E. Nelson, are now in the Smithsonian Institution at Washington (Cruise of the 'Corwin' p. 108). In the Copenhagen Museum there are three from Disco Bay, Greenland; a fourth from the same locality is now in the Cambridge Museum; another from Greenland is said to be in possession of the Hölboll family; and one which has been in the Vienna Museum since 1818, formed part of the collection made by Giesecké during his seven years' residence in Greenland. In the Brüch Collection in the Mainz Museum are two examples in the spotted plumage of the first year, said to have been obtained in Kamtschatka. One from Suderoe, Færoe Islands, is in Herr Benzon's collection at Copenhagen; and Mr. Gätke, of Heligoland, has one in winter plumage obtained on that island on the 5th of February, 1858. These, with the Yorkshire specimen, make a total of twenty-three birds obtained up to the present, and it seems probable that in a short time the American explorers at Point Barrow will be in a position to supply information respecting the nidification of this circumpolar species.

Richardson's description of the specimen killed at Alagnak, Melville Peninsula, on the 23rd June, 1823, is as follows:—

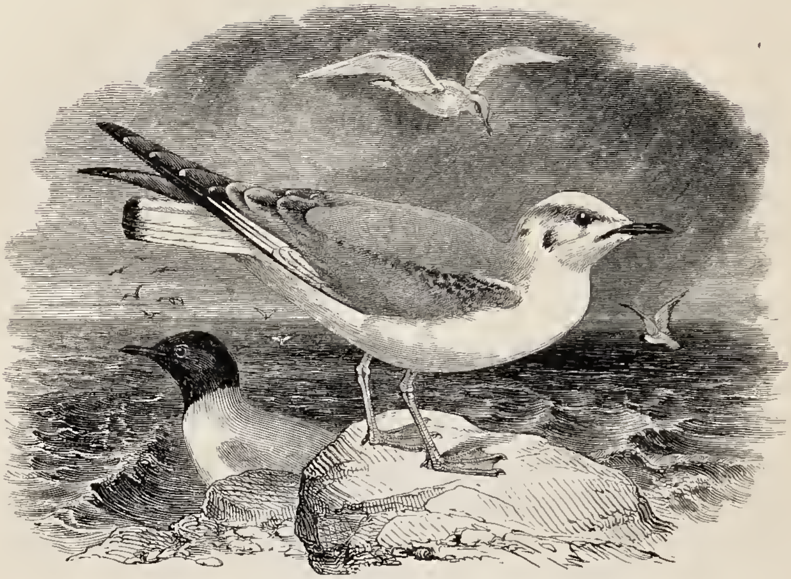
Scapulars, inter-scapulars, and both surfaces of the wings clear pearl-grey; outer web of the first quill blackish-brown to its tip, which is grey; tips of the scapulars and lesser quills whitish. Some small feathers near the eye, and a collar round the middle of the neck, pitch black; rest of the plumage white; the neck above, and the whole under plumage, deeply tinged with peach-blossom red in recent specimens; bill black, its rictus and the edges of the eyelids reddish-orange; legs and feet vermilion-red; nails blackish.

The other specimen, killed by Mr. Sherer a few days later, differs only in the first primary coverts having the same dark colour with the outer web of the first primary itself.

The Yorkshire specimen, killed in February, had the bill black; eyes with a narrow line of dark feathers around them; head, whole of the neck and breast, delicate rose-colour, mixed or clouded with french-grey; wings and back french-grey; outer web of the first primary, only, dark grey; the shafts bluish-grey; upper tail-coverts, tail-feathers, and all the under surface of the body, delicate rose-colour; under surface of the wings french-grey; the shafts of the primaries white; central pair of tail-feathers the longest; the remainder graduated, forming a wedge-shaped tail; legs, toes, and interdigital membranes vermilion; the claws black.

The whole length of the bird is about fourteen inches; wing, from the anterior bend to the end of the first primary, which is the longest, ten inches and a half; bill, from the point to the feathers on the top, three-fourths of an inch; length of the tarsus one inch and a quarter.

In the two immature specimens in the Mainz Museum the bill is black, feathered to the base of nostril, thence to tip ·6 in.; from gape to tip 1·2 in.; head white; a few dark hairlike feathers round the eye of one specimen, and beneath the eye of the other; black colour slightly developed on the one, distinct in the other, especially on the nape; breast pure white, with a pink tinge on the lower part and on the abdomen; mantle to rump grey, lighter on shoulders; primaries, first, second, and third smoke-brown on outer web and shaft, this colour running round the tip, and some way up the inner web, the remainder of which is white; on the fourth and fifth the white portion increases, but the shaft continues dark, although successively becoming lighter, till on the tenth it is pure white; in the sixth the dark marking on the webs becomes a brown bar, which gradually decreases until it is nearly lost in the ninth, and totally so in the tenth primary, which is entirely white; these dark tips give a very pretty barred appearance to the wings; secondaries pearl-grey, passing into white, thus forming a white band; carpals and upper wing-coverts smoke-brown, faintly tipped with white; lower wing-coverts grey, like the mantle, but tertials smoke-brown; tail pure white in one specimen; in the other the third and fourth feathers on each side are barred with smoke-brown (Ibis, 1875, p. 485).



Larus philadelphia (Ord*).

BONAPARTIAN GULL.

Larus Bonapartii.

Larus.—Bill of moderate length, strong, hard, compressed, cutting, slightly decurved towards the point, lower mandible shorter than the upper, the symphisis angular, prominent. Nostrils lateral, near the middle of the beak, pierced longitudinally, pervious. Legs moderately slender, lower part of the tibiæ naked, the tarsus long, three toes in front entirely palmated, the hind toe free, short, but not rudimentary, articulated high up on the tarsus above the line of the other toes. Wings long, the first and second quill-feathers varying slightly in their relative length, but nearly equal. Tail square at the end.

The late William Thompson was the first to record the occurrence of this small American Gull in the British Islands (Ann. & Mag. N. H. 1848, i. p. 192). A specimen was killed on the tidal portion of the river Lagan, between Ormeau Bridge and the Botanic Garden, about a mile above the lowest bridge at the town of Belfast, on the 1st of February, 1848. It was flying singly. The person who shot the bird, attracted by its pretty appearance merely, left it to be preserved with a taxidermist, who, on receipt of any species either rare or unknown to him, was in the habit of taking them to Mr. Thompson for his inspection. The bird was therefore examined previous to its being skinned, and exact measurements were made. Two less thoroughly authenticated occurrences in Ireland are also recorded: the former on the coast, about seventeen miles north of Dublin, on the 14th February, 1855 (Zool. p. 4762); the other in Dublin Bay in the month of July (Zool. s.s. p. 306), which, provided the identification was correct, is a remarkable time of year for such a species to present itself.

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* *Sterna philadelphia*, Ord, in Guthrie's Geography, 2nd Amer. Ed., ii. p. 319 (1815). The name of *Larus bonapartii* was not conferred by Swainson until 1831.

As regards the occurrence of Bonaparte's Gull in Scotland, there is not the slightest doubt. About the end of April, 1850, Sir George H. Leith-Buchanan, Bart., shot a fine adult specimen, a portrait of which was sent to the Author, and clearly identified (Zool. pp. 3117, 3118); but as some scepticism had recently been expressed in a standard work on ornithology, Sir George sent the bird to the Editor, who exhibited it before a meeting of the Zoological Society on the 4th of March, 1884.

Three examples of this rare straggler have also been obtained in England, and have been recorded by the late Mr. E. H. Rodd, whose attention was drawn to the first of them by Mr. Gould (Zool. p. 9501; B. Cornwall, p. 168). It was shot in Falmouth Harbour on the 4th January, 1865, having been observed for some hours by the captain of a vessel, flying in company with a Herring Gull, and both birds fell to the same discharge. The second specimen was shot on the 10th of the same month near Penryn, by a son of Mr. A. G. Copeland. The third, which is in the collection of Mr. F. Pershouse of Torquay, was shot by him early in November, 1870, at St. Leonards, Sussex, and has been fully identified by Mr. Cecil Smith (Zool. 1883, p. 120). There is not as yet any authenticated record of the occurrence of this species on the coasts of the Continent.

Bonaparte's Gull is widely distributed throughout North America, from the Arctic regions in summer, down to the Southern States and the Bermudas, on migration. Dr. Elliott Coues remarks that this species begins to arrive on the Carolina coast in September, and stays a month or so, but none pass the entire winter there. Audubon says that it is very abundant in winter on the coast of Florida. With the first genial weather in April, and throughout the greater part of May, there is a succession of birds passing northwards; the earlier ones being adults, while the later arrivals are young of the previous year. It is not known to breed within the boundaries of the United States, but Dr. Coues saw a great many in Labrador and about the mouth of the St. Lawrence, at a time of year which rendered it probable that they bred at no great distance. As regards British North America, Richardson ('Boat Voyage,' i. p. 200) says: "One of the birds we traced up to its breeding-places on Great Bear Lake, but not to the [Arctic] sea-coast, is the pretty little Bonapartean Gull. This species arrives very early in the season, before the ground is denuded of snow, and seeks its food in the first pools of water which form on the borders of Great Bear Lake, and wherein it finds multitudes of minute crustacean animals and larvæ of insects. It flies in flocks, and builds its nests in a colony resembling a rookery, seven or eight on a tree; the nests being framed of sticks, laid flatly. Its voice and mode of flying are like those of a Tern; and, like that bird, it rushes fiercely at the head of any one who intrudes on its haunts, screaming loudly. It has, moreover, the strange practice, considering the form of its feet, of perching on posts and trees; and it may be often seen standing gracefully on a summit of a small spruce fir." Its breeding-grounds extend over the greater part of Arctic America, and eggs obtained by the late Mr. MacFarlane at Anderson-River Fort have been received by the Smithsonian Institution. One, figured by Prof. Newton (P. Z. S. 1871, p. 57, pl. iv. fig. 6), measures 1·8 by 1·29 in.; its colour is greenish-buff blotched and zoned with dark brown. Mr. E. W. Nelson says that this

Gull is rare along the Alaskan coast, being found there merely as a straggler from its breeding-grounds in the interior, and there is no record of its occurrence on any of the islands of Bering Sea, or on the opposite coast of Siberia. On migration it goes for some distance down the coast of California, and is a visitor to the Great Salt Lake of Utah.

Audubon gives the following particulars in his 'Birds of America': "No sooner do the shad and old-wives enter the bays and rivers of our Middle Districts, than this Gull begins to show itself on the coast, following these fishes as if dependent upon them for support, and after the 1st of April, thousands of Bonapartian Gulls are seen gamboling over the waters of Chesapeake Bay, and proceeding eastward, keeping pace with the shoals of fishes. During my stay at Eastport in Maine, in May, 1833, these Gulls were to be seen in vast numbers in the harbour of Passamaquody at high water, and in equal quantites at low water on all the sand and mud-bars in the neighbourhood. They were extremely gentle, scarcely heeded us, and flew around our boats so close that any number might have been procured. My son John shot seventeen of them at a single discharge of his double-barrelled gun, but all of them proved to be young birds of the preceding year. Their stomachs were filled with coleopterous insects, which they caught on the wing, or picked up from the water. On the 24th of August, 1831, when at Eastport with my family, I shot ten of these Gulls. The adult birds had already lost their dark hood, and the young were in fine plumage. In the stomachs of all were shrimps, very small fishes, and fat substances. The old birds were still in pairs."

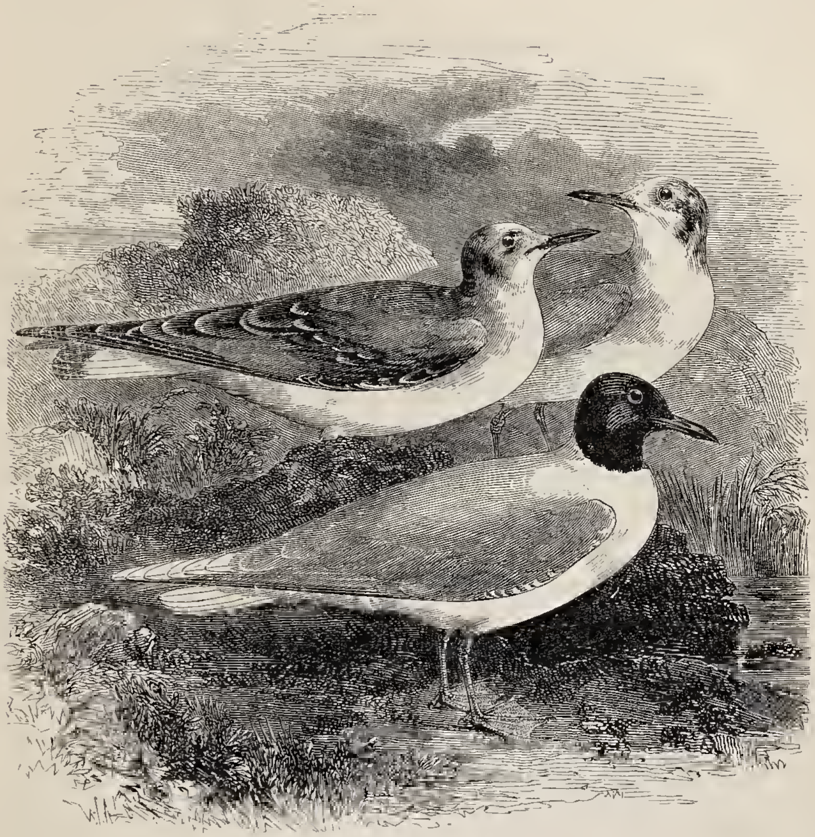
An adult male killed at Great Slave Lake at the end of May, 1826, is thus described by Sir John Richardson:—"Neck, tail-coverts, tail, whole under plumage and interior of the wings pure white; hood greyish-black, extending half an inch over the nape, and as much lower on the throat; mantle pearl-grey, this colour extending to the tips of the tertiaries, secondaries, and two posterior primaries; the anterior border of the wing white; the outer web of the first primary, and the ends of the first six are deep black, most of them slightly tipped with white; the inner web of the first primary, with the outer webs of the three following ones, with their shafts, are pure white; bill shining black; inside of the mouth and the legs bright carmine-red; irides dark brown." In winter the hood is lost, and the occiput and ear-coverts are merely streaked with blackish.

The female is a little smaller than the male, but there is no difference in plumage; and the statements by Audubon and Bonaparte that the female has a brown hood are inexplicable. The average length is from fourteen inches to fifteen inches and a half; wing, from the bend to the end of the longest quill-feather, ten inches.

A young bird in its first plumage, killed at the end of August, has the crown of the head, back of the neck, scapulars, and interscapulars mottled with greyish-brown, with paler tips; middle of the wing and tertiaries grey, barred with blackish-brown, the tips lighter; outer webs of first and second primaries black, with a streak of the same on the inside next the shaft; margins of inner webs white; throat and upper part of the breast white; tail white, with a blackish-brown bar; bill brownish, pale at the base beneath; legs clay-coloured.

The lower figure here given is intended to represent the anterior half of an adult bird in the breeding-plumage; the entire figure placed on the rock is a young bird in the dress of its first winter.

Bonaparte's Gull may easily be recognized by its small size —only exceeding that of the Little Gull, *L. minutus*—its comparatively slender bill, and by the *white* margins to the inner webs of the outer primaries, at all stages. With approaching maturity the white extends to both webs, except the outer web of the first primary, which is always black; and the broad black ends to the first six quill-feathers are also characteristic.



Larus minutus, Pallas*.

THE LITTLE GULL.

Larus minutus.

This interesting little Palæarctic Gull, the smallest of its genus, was first described and figured as a British bird by Colonel Montagu, in the Appendix to the Supplement of his Ornithological Dictionary, from a young bird in the plumage of the first year that was shot on the Thames near Chelsea, and then in the possession of Mr. Plasted of that place, at the sale of whose collection it passed into the possession of Mr. Leadbeater. Mr. Bullock's celebrated collection contained two examples in 1819, which were then considered very rare. Since that time various specimens have occurred in different states of plumage; but it was not until the year 1866 that this species was remarked as occurring in any numbers. In that year it was tolerably numerous on the Yorkshire coast, where, in 1868, Mr. J. H. Gurney, jun., knew of some fourteen or more specimens obtained between the 12th of July and the 21st of November, two of those shot in the former month having black heads. In that year only one was obtained in Norfolk; but during the winter of 1869-70, especially after the heavy easterly gales of February, Mr. Bond saw eleven specimens in Leadenhall Market, eight of which were adults; Mr. Stevenson judged that over sixty had been killed on the Norfolk coast (Tr. Norfolk & Norw. Nat. Soc. i. pp. 65–70), the proportion of old birds being about twenty-nine to six immature; and about thirty birds were obtained at Bridlington, nineteen of these being adults. Passing northwards, the Little Gull is recorded from Durham and Northumberland; and from various localities along the east coast of Scotland up to Sutherland and Caithness, and also in Shetland; but on the western side the records of its visits are rare; it has, however, been obtained on the Firth of Clyde; in the Isle of Skye; and on Loch Lomond. It has also occurred on the Solway and in Lancashire; but it seldom visits Wales, although in Cornwall both adults and immature examples are occasionally met with in winter. In South Devon Mr. Gatcombe knows of upwards of half a dozen immature birds killed near Plymouth; and it has occurred in Somersetshire and along the south coast of England. Inland it has been obtained at King's Newton in Derbyshire (Zool. p. 3118).

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* Reise Russische Reichs, iii. p. 702, App. no. 35 (1776).

In Ireland an adult in summer plumage is recorded by Thompson as having been shot on the Shannon; and it has been recorded in Galway; at Belfast; near Dublin; and on other parts of the coast.

The Little Gull is only a recent straggler to southern Norway, but according to Nilsson it formerly bred in Gottland. It is a visitor to the coasts and islands of the Baltic and the North Sea, ranging along the shores of France and the Iberian Peninsula to the Mediterranean, throughout the whole of which it is generally distributed, on both the European and African sides, from autumn to spring. On migration it also visits Switzerland and other inland portions of the Continent. It tarries until somewhat late in spring on the Black Sea and in the marshes of Southern Russia, and, according to Sabanaëff, it is more numerous than any other Gull in the Ural, nesting on the lakes in great colonies; but its best-known breeding-grounds are in the northern morasses between Lake Ladoga and Archangel, the latter being apparently its most northern limit. Eastward its range extends across Siberia to the Lena, south of Yakutsk, where Middendorff obtained it in May; and he also found it on the Stanovoi Mountains and on the southern shores of the Sea of Okhotsk. As a straggler it has once visited Northern India, but with that exception it is not known to have occurred east of the southern extremity of the Caspian, or south of the great Asiatic plateau; nor does it visit the Pamir range. It was formerly included among the birds of the Fur countries of North America by Sabine and Richardson, but no specimens are extant, and not only is there no confirmatory evidence of its occurrence in the Nearctic region, but it is almost certain that the species meant was Bonaparte's Gull.

A full and interesting account of the breeding of the Little Gull is given in Dresser's 'Birds of Europe,' by Mr. W. Meves of Stockholm. He found a large colony of these 'Scheiks,' as the Russians call them, in the vicinity of Lake Ladoga, the nests being placed on almost floating islands, formed of plants and constructed of leaves and grass. The eggs were usually three or four in number, and only one nest contained five, of which one was considerably less than the others. The Common Tern was nesting among the Gulls; but Mr. Meves observed, on blowing an egg that he took out of a Gull which he had shot, that the yolk was of a rich orange-red colour, whereas in the eggs of the Common Tern it was ochre-yellow, and this difference he found to be constant.

The usual form of the eggs is ovate or pear-shaped; the ground-colour greenish-olive or greenish-brown with dark brown markings, often collected at the larger end, so as to form a zone; average measurements 1·65 by 1 in. Both the old males and females had three incubation-spots—one in the middle of the abdomen, the others on the sides. A few of the last year's young were about the place, but there was no sign of their breeding. The stomachs of the Little Gulls examined by Mr. Meves chiefly contained small fishes, which they were continually catching in the lake, and very few had insects; but probably, when the *Neuroptera*, *Phryganiæ*, and *Ephemera* are abundant, they feed on these in preference. The flight of this species is peculiarly graceful, and the slaty-black underside of the wing forms an easily recognizable characteristic. According to Mr. Meves the female differs from the male in having the bill rather lighter-coloured, and the under surface of the wings much lighter, and greyish-black. The rose tinge is quite as deep as in the male—indeed, often deeper. The female is rather less in size than the male.

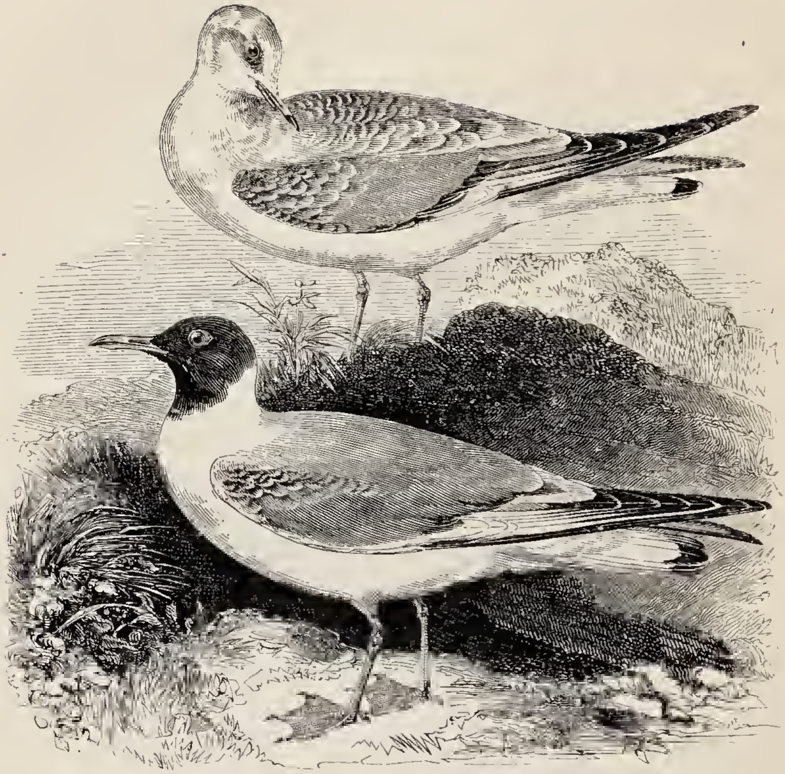
The figure of this bird in its summer plumage at the head of this subject, was taken from a specimen given to the Author by Mr. Gould. In this specimen the bill is reddish-brown; the irides very dark brown; the whole of the head and the upper part of the neck, all round, is black; the neck below white; the back, wing-coverts, and wings uniform pale ash-grey, the primaries of the same hue on the outer but darker on the inner webs, with white at the end and on lower portion of the margin of the inner web; upper tail-coverts and tail-feathers white, the tail in form square at the end; all the under surface of the body and under tail-coverts white; legs, toes, and membranes vermilion.

In winter the bill is almost black; forehead and upper part of neck in front, and on the sides, pure white; occiput and nape of the neck streaked with greyish-black on a white ground; a dusky spot under the eye, and an elongated patch of dusky black falling downwards from the ear-coverts; all the other parts as in summer.

A young bird of the year, killed at Scarborough in the middle of November, and figured in this work, had the bill black, irides very dark brown; forehead and lore white; top of the head, occiput, and ear-coverts, greyish-black; nape of the neck white, forming a collar by uniting with the white of the front; below the nape a broader black band extending towards, but not reaching, the wings; back, scapulars, and tertials pale pearl-grey, with a few black feathers appearing through; wing primaries and secondaries greyish-black, tipped with white, nearly the whole of the inner webs white; greater wing-coverts pearl-grey; smaller coverts black, edged with grey; upper tail-coverts white; upper surface of tail-feathers white, with a broad terminal band of black which is broadest on the middle feathers, the outer tail-feather on each side wholly white; all the under surface of the body and wings, under tail-coverts, and each outside tail-feather white, the other tail-feathers white with a narrower margin of greyish-black; legs, toes, and interdigital membranes in this preserved specimen pale yellow-brown. The whole length was ten inches and one-eighth; wing from the wrist eight inches and three-quarters.

In a younger specimen killed near Aberdeen in August, and presented to the Editor by Mr. E. Hargitt, the top of the head, occiput, ear-coverts, nape, scapulars and tertials are dark brown, and that colour extends over all the tail-feathers. These signs of immaturity disappear after the autumnal moult of the following year.

A downy nestling from Archangel, lent to the Editor by Mr. E. Bidwell, is of a warm buff, streaked and spotted with dark brown; legs, feet and interdigital webs clay-yellow.



Larus ridibundus, Linnæus.*

THE BLACK-HEADED GULL.

Larus ridibundus.

The Black-headed Gull is abundant on various parts of our shores, particularly those that are flat and marshy. In such situations it is very common, and while wearing its dark brown hood in summer is easily recognized and well known. During winter it frequents the coast, but being decidedly a marsh-breeder, it assembles in great numbers early in spring, year after year, at various localities favourable for the purpose of incubation.

The progress of cultivation, and consequent drainage of marshes, has led to the inevitable decrease in the number of its breeding-places, some of those which existed when the former editions of this work were written being now covered by corn-fields, whilst one is the centre of a populous town. On the other hand, the birds which have been driven from their former haunts by adverse circumstances, have, in many cases, met with protection and encouragement elsewhere; and altogether few marsh-frequenting species have suffered less seriously than the present.

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* Syst. Nat. Ed. 12, i. p. 225 (1766).

It would be difficult to give a complete list of the colonies of the Black-headed Gull in England, many of them being of small importance, and of brief existence, owing to the habits of the birds; nor is it necessary to enumerate those which are now things of the past.* In the southern counties of England there do not appear to be any to the west of Dorsetshire, in which there is a large colony near Poole. Until recently there was an interesting colony in Romney Marsh in Kent, but the progress of the new railway from Lydd to Dungeness will, in all probability, destroy one of the most picturesque and most easily observed settlements in England, and one which was an especial favourite with the late Mr. Gould. Nor is there any breeding-place of this species known to the Editor at the present day in Essex or Suffolk; and in Norfolk some of those existent until quite recent times are now pasture-land; but two still remain—Hoveton and Scoulton. The former, belonging to Mr. Blofield, dates from 1854, when about thirty broods were hatched, and the birds being carefully protected have steadily increased in numbers, especially since they were driven from Rollesby Broad, and other places. The other Norfolk 'gullery'—that of Scoulton Mere—is probably the largest and best known in the kingdom, having been described by Messrs. Sheppard and Whitear, Lubbock, H. Stevenson, J. H. Gurney, jun., G. Dawson Rowley, T. Southwell, and others. The following is taken from the Catalogue of Norfolk and Suffolk Birds by the first-named writers.

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* For some interesting remarks on past and present "Gulleries," see Mr. J. E. Harting in 'The Field' of 2nd and 16th February, 1884.

"In the middle of this mere there is a boggy island of seventy acres in extent, covered with reeds, and on which there are some birch and willow trees. There is no river communicating between the mere and the sea. This mere has from time immemorial been a favourite breeding-spot of the Brown-headed Gull. These birds begin to make their appearance at Scoulton about the middle of February; and by the end of the first week in March the great body of them have always arrived. They spread themselves over the neighbouring country to the distance of several miles in search of food, following the plough as regularly as Rooks; and, from the great quantity of worms and grubs which they devour, they render essential service to the farmer. If the spring is mild, the Gulls begin to lay about the middle of April; but the month of May is the time at which the eggs are found in the greatest abundance. At this season a man and three boys find constant employment in collecting them, and they have sometimes gathered upwards of a thousand in a day. These eggs are sold on the spot at the rate of fourpence a score, and are regularly sent in considerable quantities to the markets at Norwich and Lynn. They are eaten cold like Lapwings' eggs, and also used for culinary purposes; but they are rather of an inferior quality, and somewhat like Ducks' eggs in flavour. The person who sells these eggs gives fifteen pounds a year for the privilege of collecting them. This species of Gull never lays more than three eggs the first time; but, if these are taken, it will lay again. We found many of the old birds sitting in the middle of June; most of these had only one egg in the nest, but a few of them had two. Their nests are made of the tops of reeds and sedge, and are very flat at the surface. The eggs vary so much in size, shape, and colour, that a person not well acquainted with them would suppose some of them to belong to a different species of bird. Some are thickly covered with dusky spots, and others are of a light blue colour without any spots at all. The young birds leave the nest as soon as hatched and take to the water. When they can fly well the old ones depart with them, and disperse themselves on the sea-coast, where they are found during the autumn and winter. By the middle of July they all leave Scoulton, and are not seen there again till the following spring. We were a little surprised at seeing some of these Gulls alight and sit upon some low bushy willows which grow on the island. No other than the Brown-headed Gull breeds at this mere; a few of them also breed in many of the marshes contiguous to the sea-coast of Norfolk." Scoulton Mere is very shallow, the greatest depth being five feet.

Mr. Stevenson says:—"By the 18th of April the first eggs are laid, rarely more than three in each nest, and after the usual gatherings seldom more than two. For the first month two men are employed to collect three days a week, viz., Mondays, Wednesdays, and Fridays, picking up every egg they can find, and generally at the rate of from 1,500 to 2,000 a day; but when in full laying, and left undisturbed from Friday to Monday, between 3,000 and 4,000 have been taken in one day. . . . In this manner from 10,000 to 20,000 eggs have been obtained in different seasons." In 1825 they fetched 4*d.* a score; in 1870, according to Mr. Stevenson, they sold on the spot at 9*d.* to 1*s.* a score.

The present Sir Charles H. J. Anderson sent the Author notice of another breeding-place in Lincolnshire, frequented annually by many hundreds of this species. This is at Twigmoor, near Brigg—an estate now belonging to Robert Nassau Sutton, Esq., of Scawby. It consists chiefly of warren ground, partly covered with heather, dwarf shrubs, and birch-trees. In the centre of this is a piece of water of about eighteen acres, the sides of which are green swamps, so spongy, that it is impossible to walk upon them. In these swamps the Black-headed Gulls breed in great quantities, assembling in April, laying their eggs among the rushes in May, and hatching in June. The young, till they are able to fly, creep about among the reeds, or launch out into the open water in fleets if a dog is sent into the swamp to disturb them; the old birds screaming, and almost darting in the face of any one who approaches and dwells upon the haunts of their young. In reply to inquiries, Sir Charles Anderson informs the Editor that the number of birds has increased, owing to protection from disturbance, and an overflow colony is now established on Sir R. Sheffield's property, a few miles off.

In Yorkshire there is a 'gullery' on Thorne Waste, and a small one on Strensall Common, an ancient haunt to which they returned in 1881; but the large breeding-place at Hornsea Mere, in Holderness, has been broken up by drainage. In Northumberland there are still colonies at Harbottle Tarn; at Hallypike Lough; at Sweethope; and at Pallinsburn, the latter being the ancient seat of the Askew family, where owing to protection the species is as abundant as ever; and detachments have established themselves at Dunse Castle, and at Paston Lake, near Yetholm, across the Border. On the western side Mr. T. Duckworth informs the Editor that there are 'gulleries' on Bowness Moss, Solway-flow, Wedholm-flow, Bolton Moss, Ravenglass, and several other places. Passing southwards there was until about eight years ago a colony on Pilling Moss, near Morecambe Bay in Lancashire, and half a century ago Gulls were nesting on the present site of the town of Fleetwood. Across the Bay is another and well-known 'gullery' on Walney Island; and there are colonies at Winmarleigh, and on a small tarn upon the Bleasdale Fells.

In Staffordshire there is, or was, a famous colony described by Willughby (Ornithology, 1678, p. 347), who refers to the bird as "the Pewit or Black-cap, called in some places the Sea Crow, and Mire Crow," and thus describes the practice of fattening it for the table:—"When they have taken them, they feed them on the entrails of beasts; and when they are fat, sell them for fourpence or fivepence apiece.*

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* Our ancestors appear to have been rather partial to strong-flavoured food. Thus the Dr. Thomas Muffet, in his "Health's Improvement," already quoted on several occasions, says:—"White Gulls, Grey Gulls, and Black Gulls (commonly termed by the name of 'Plungers' and 'Water Crows') are rejected of every man as a fishy meat; nevertheless, being fed at home with new curds and good corn till they be fat, you shall seldome taste of a lighter or better meate."

Of this kind (he says) are those birds which yearly build and breed at Norbury, in Staffordshire, in an island in the middle of a great pool in the grounds of Mr. Skrimshaw, distant at least thirty miles from the sea. Here they take yearly about a thousand two hundred young ones: whence it may be computed what profit the lord makes of them."

It was this 'gullery' which John Ray visited during one of his tours, in May, 1662. On his way from Stafford to Nantwich he says (Itin., pp. 216, 217):—"We diverted out of our way to see the *Puits*, which we judged to be a sort of *Lari*, in a meer at Norbury, belonging to Col. Skrimshaw. They build together in an islet in the middle of a pool. Each hen layeth three or four eggs of a dirty blue or sea green spotted with black: at the driving every year they take commonly above a hundred dozen young, which they sell at five shillings the dozen. The colour of the *Puit* is near that of a *Seamew; i.e.* white and somewhat flecked, only the head is perfectly black; about the bigness of a Teal or a Widgeon."

The annual driving of these Gulls, referred to by Ray, has been particularly described by Plot in his 'History of Staffordshire,' 1686, where a very interesting account is given of this 'gullery.' It appears that there was more than one pool on the Skrymsher Estate, to which these birds used to resort and breed. They anciently came to the old 'Pewit pool,' known as Shebden Pool, about half a mile south-west of Norbury Church, but removed on the death of the head of the family to Offley Moss, near Woods Eves, where they continued about three years, and then returned to 'the old Pewit poole' again. After another attempt to laying at Offley Moss, they did not breed at all one year, and the year following went to Aqualate Mere, then belonging to the Skrymsher family, by whom Aqualate Hall was built in 1633, but now to the Boughey family:—

"After three weeks' setting," says Plot, "the young ones are hatched, and about a month after are ready to flye, which usually happens on the 3rd of June, when the proprietor of the poole orders them to be driven and catch'd, the gentry coming in from all parts to see the sport, the manner thus: They pitch a rabbit net on the bank side, in the most convenient place over against the hafts, the net in the middle being about ten yards from the side, but close at the ends in the manner of a bow. Then six or seven men wade into the poole beyond the Pewits over against the net with long staves, and drive them from the hafts, whence they all swim to the bankside, and, landing, run like Lapwings into the net, where people standing ready take them up and put them into two penns made within the bow of the net, which are built round, about three yards diameter and a yard length, or somewhat better, with small stakes driven into the ground in a circle, and interwoven with broom and other raddle. In which manner there have been taken of them in one morning fifty dozens at a driving. They commonly appoint three days of driving them within fourteen days, or thereabouts, of the 2nd and 3rd of June." Garner, who, in his 'Natural History of the County of Stafford,' refers to these Gulls having bred at Shebden Pool, near High Offley, in Plot's time (1686), states, on the authority of Shaw (Hist. and Antiq. Stafford, 1798), that there were none there in 1794.*

In Scotland the breeding-places are very numerous on the mainland, and there are colonies on the larger islands as far north as the Shetlands. Mr. Robert Gray mentions two within easy reach of Glasgow; one of them containing from 500 to 800 pairs, on a small marshy islet in Hairlaw Loch —a patch of water, partly artificial, situated near Neilston Pad, which is within full view of the city; the other on the island of Inchmoin in Loch Lomond. From the northern districts it migrates to some extent during severe winters, but on the whole it may be considered a resident species. In Ireland it is, perhaps, the commonest of all the Gulls, and numerous breeding-places are studded throughout the country. Thompson mentions several colonies, but owing to inundations and persecution the birds are in the habit of shifting their quarters, and there is a lack of recent details.

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* J. E. Harting, *l. c.*

The Black-Headed Gull nests in one locality in the Færoes, which appear to be the limit of its range to the north-west; it also breeds sparingly in Southern Norway and Sweden; and in Russia it goes as far north as Archangel, becoming very abundant to the southwards. It is of general distribution on the waters, marshes, and coasts of the rest of Europe down to the Mediterranean, the most southern breeding-place known being in the island of Sardinia; it frequents the coast of North Africa in winter, and it is not improbable that some breed in Lower Egypt. It goes up the Nile to Nubia; occurs in the Red Sea; and, following the line of the Euphrates valley, it ranges from Palestine to the coasts of India. Nowhere is it more abundant than on the lakes and marshes of Central Asia from the Caspian to the Sea of Okhotsk and Kamtschatka; and in the waters of Japan. On migration it visits the lower portions of the Pamir, and passes by Gilgit, probably on its way to and from India; but on the elevated mountain lakes of the great Asian plateau, from the Kara-kul to Mongolia, it is replaced as a breeding-species by its somewhat larger and more robust congener, *Larus brunneicephalus*, which has a hood of a lighter brown, and a different wing-pattern, and which also visits the coasts of India in the cold season. Our Black-headed Gull nests, however, in the Ussuri valley and on the Hanka Lake, visiting the coasts of China in winter; and Colonel H. H. Godwin-Austen obtained a specimen about 500 miles up the Brahmapootra; but it has not yet been recorded from Ceylon, or more southern localities. In South America there are two brown-headed species of about the same size, but with a very different wing-pattern: *L. maculipennis* of the Rio de la Plata and Patagonia, and *L. glaucodes* of Chili.

As already stated, the Black-headed Gull nests in marshy places, commencing to lay in the latter half of April if the weather is mild, or early in May; the eggs are normally three in number, and when four or more are found in the same nest they are probably the produce of different females. The ordinary colour is a yellowish or greenish olive-brown, blotched with two shades of dark umber; but a pale blue ground-colour is not uncommon, and salmon-coloured eggs have been taken on a loch about 550 ft. above sea-level in Sutherlandshire. The average measurements are 2 by 1·5 in. When their nests are robbed, the birds are induced to lay two or three times; the eggs produced at these second and third layings being sometimes one-third less than the natural size. Mr. J. Dunbar Brander has given an account of a remarkable caprice on the part of a Black-headed Gull, which withdrew from the neighbouring 'gullery,' and established its nest on the top of the locker in the bows of a boat moored to a stake about twenty yards from the shore ('The Field,' June 23rd, 1877). Incubation lasts about seventeen days, and as soon as they are hatched the young conceal themselves in the herbage on the approach of danger, so that it is very difficult to avoid treading on some of them in a crowded 'gullery'; they also take to the water readily.

The note of this Gull is a hoarse cackle, which, from its effect when quickly repeated, has been compared to a laugh, and has given rise to one of its specific appellations. Its flight is easy and buoyant. Its food is crustaceans, mollusks, insects, worms; occasionally small fishes, and even small mammals, such as mice; and small birds; in fact it is practically omnivorous, and the mouth of a sewer is often frequented for the sake of the floating offal. It feeds largely on wire-worms and grubs picked up in the freshly-turned furrows, and the stomachs of some birds have been found to contain grain and vegetable matter. The Rev. Richard Lubbock mentions that he saw several of these birds in June dashing round some lofty elms catching cockchafers, and Thompson records the partiality of this species to moths.

The adult bird in summer has the beak lake-red; irides hazel; eyelids crimson; a white crescentic patch across the eye; the head, occiput, and upper part of the neck, all round, dark brown, the colour being most intense when first assumed, and fading with time and wear; sides and back of the neck pure white; back, wing-coverts, secondaries, and tertials, uniform french-grey; the first quill-primary black on the greater part of the outer web, white on the inner web, with a blackish margin and tip; the second and third primaries white on both webs, with the exception of a hair-streak of black on the outer, and dark margins to the inner webs; tips black, shafts white; the fourth white on the outer web, grey on the inner web, and edged with black; the fifth and sixth grey on both webs, the edge of the inner or broader web and the point black; tail-coverts and tail-feathers white; front of the neck, the breast, and all the under surface of the body and tail, pure white with a rosy tint; legs and feet like the beak, lake-red.

The whole length is sixteen inches; from the front of the wing to the end of the first quill-feather, which is slightly the longest, twelve inches. Bewick's figure of the Black-headed Gull represents a bird in this state of plumage; the lower figure in the illustration here given is from a nearly adult male bird, two years old, killed at the nest in the breeding-season, but still exhibiting some slight traces of immature colours in the few brown feathers on the anterior part of the wing, and in the narrow black tips to the tail-feathers.

The assumption of the dark colour on the head in the spring is very rapid. A Gull in the Gardens of the Zoological Society began, some years since, to change colour on the head, from white to dark brown, on the 11th of March; it was a change of colour, and not an act of moulting, no feather was shed, and the change was completed in five days. Another bird, some seasons afterwards, had not completed the dark colour till the beginning of May, but the time required for the change was not noted. In vigorous birds, and in mild climates, the hood is assumed at an early date; in 'The Field' of 23rd January, 1875, is a record of an individual with a dark head observed at Exmouth on the 21st of December, and one with an entirely black hood on the 11th of January.

In the winter plumage the adult has no hood; but the head is streaked with greyish, and there is a dark patch of the same colour before the eye, and behind the auricles.

The upper figure in the illustration here given is from a young bird of the year killed in August; at which period the head is marked with greyish-brown, on a ground of white; the back, scapulars, smaller wing-coverts, and the tertials mottled with brown; greater coverts and secondaries french-grey; the first three primaries black on the outer webs and on the margins of the inner webs, with white shafts and centres; tail-feathers white, with a broad bar of black at the end; beak, legs, and feet yellowish-brown.

In still younger birds there is, for a short time, a dark line on the inner web next the shaft, but the permanent characteristic of this species is that the central portion of the outer primaries is *always white*.

The young in down is buffy-brown, spotted or streaked with black.

The Masked Gull, *Larus capistratus* of Temminck, described and figured in former Editions of this work, is now generally admitted to have been based upon small examples of this species—generally females—with hoods only partially developed, or contracted by the make-up of the preserved skins. Many such specimens measure only eleven inches in length of wing.

THE MEDITERRANEAN BLACK-HEADED GULL, *Larus melanocephalus*, Natterer, was recorded by the Editor (Ibis, 1872, p. 79) as having been obtained on the Lower Thames. His attention was called to a specimen in the British Museum by the late Mr. G. R. Gray, who stated that it had been purchased from Mr. H. Whitely, curator of the Royal Artillery Museum at Woolwich. The latter, in reply to the Editor's inquiries, wrote to him as follows:—

"I find, upon looking back at my books, that I sold Mr. G. Gray a Gull on the 23rd of March, 1866, which, at the time, he took to be a hybrid between the Common Gull and the Kittiwake. This bird was shot in the month of January, 1866, near Barking Creek, by a waterman, and brought to me for sale with other birds: I bought this bird, not knowing what species it was, and at the date mentioned took it to Mr. Gray."

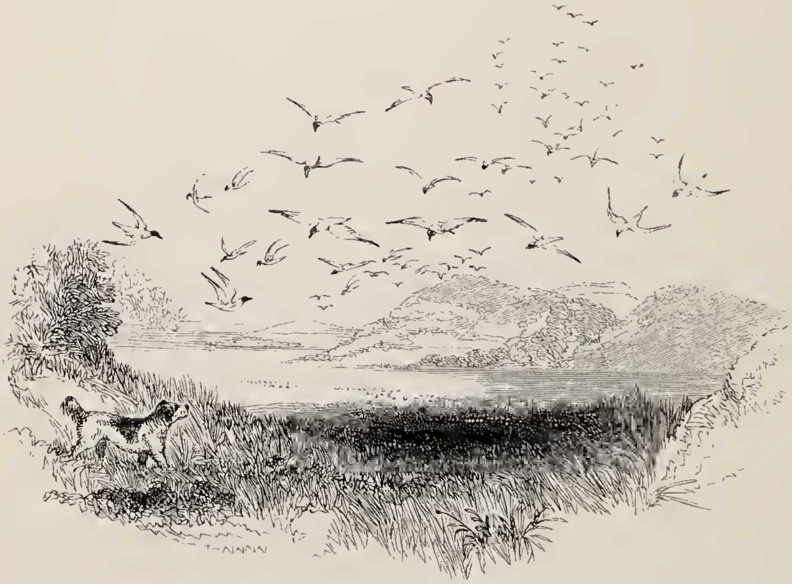
The specimen in question is a bird of the first year, in precisely the same state of plumage as a Maltese example shot early in February. The Editor has not the slightest doubt that the facts are as stated, but, inasmuch as there is just a chance of an accidental exchange of specimen, or label, between 1866 and 1871, when the Editor examined the bird in question, he does not think that its pedigree is sufficiently perfect to justify the admission of the species as a British bird. In case, however, it should again visit these shores, its distinguishing characteristics and geographical distribution are briefly sketched.

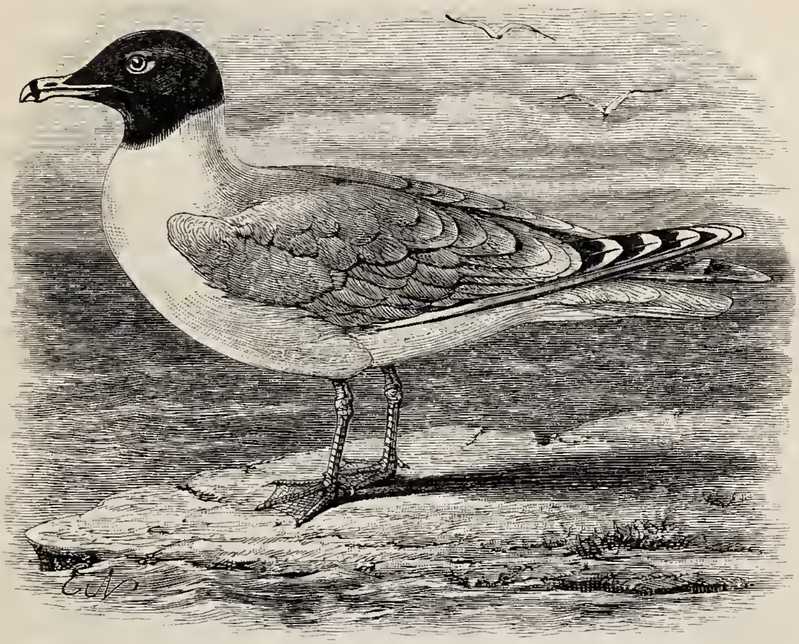
In its fully adult plumage, *Larus melanocephalus* may be easily recognized by its jet-black head, stout coral-red bill with a darkish band in front of the angle, and white primaries (with the exception of a black streak on the outer web of the first); but in less mature specimens which have assumed the black hood for the first time, there are black streaks and cross-bars on both webs of the first five primaries. In the bird of the year, like the one in the British section of our Natural History Museum, the first five primaries have the outer webs, the shafts, and the greater portion of the inner webs, of a dark brown on both upper and under sides, with light margins; whereas in young *L. ridibundus* the shafts and the contiguous portions of the inner webs are white with dark margins. On the wing, when seen from below, these distinctions are very noticeable; as also the greater robustness of bill in *L. melanocephalus.*

The geographical distribution of the Mediterranean Black-headed Gull is somewhat circumscribed. It breeds in the marshes of the Black Sea, and on the coasts of Asia Minor; and perhaps in Lower Egypt; the species being generally distributed throughout the whole of the Mediterranean, in which it has probably many nesting-places, although their exact localities are little known. Outside the Straits of Gibraltar the Editor observed this species, apparently breeding, near Huelva; and Mr. A. Chapman shot a specimen from its eggs on some low islands off the 'marisma' (Ibis, 1884, p. 86). During the first fortnight of March, 1882, about a score frequented the Bay of St. Jean-de-Luz, in the extreme south of the Bay of Biscay; and the Editor considers it probable that they were on their way to some breeding-grounds on the low coast between that place and Bordeaux, inasmuch as the species is known to be a regular visitor to the Gironde. Stragglers are said to have occurred in Central Germany; on the Lake of Constance; and on the Rhine near Mainz.

The Laughing Gull, *Larus atricilla*, Linnæus, is an American species, which appears to have been admitted into the British List owing to a misapprehension on the part of Montagu, and of his contemporaries. The American bird is larger and stouter than our *L. ridibundus*, and has a darker mantle, but the main characteristic by which it may be distinguished from every other Gull of its size (except two tropical species from the Red Sea and vicinity), consists in the three outer *primaries*, which are *black* with minute white tips. This is the true Laughing Gull, which Linnæus described from Catesby's History of Carolina by the name of *L. atricilla.* As regards the bird which Montagu called the Laughing Gull in his Ornithological Dictionary, the following description seems to show that he could not have been acquainted with the American bird and its specific distinctions. He says:—"This species is larger than the Black-headed Gull; length eighteen inches. It differs from that bird only in the legs, which are black; the bill is however stronger, and the head larger." He continues: "In the month of August, 1774, we saw five of them together feeding in a pool in the shingley flats near Winchelsea; two only were black on the head, the others were mottled all over with brown. One of them was shot; but, although the remaining four continued to resort to the same place for some time, the old ones were too shy to be procured. We also saw two others near Hastings in Sussex. They may be easily known from the Black-headed Gull, even when flying; the flight is different; the bird appears much larger, and the tail shorter in proportion." From this it is clear that, to whatever species it may have belonged, the bird obtained was a very young one in mottled-brown plumage; but it was subsequently assumed by the late Mr. Gould, and by other writers, that this was the identical specimen now in the British collection at the Natural History Museum. This is certainly an error, for although the specimen in the British section is undoubtedly an American Laughing Gull, it is not a young bird of the year, but a nearly adult specimen, with pure white tail, unmottled slate-grey mantle, and black freshly-moulted primaries; the only remaining sign of immaturity being a few brownish and very old feathers about the head. Nor is there any evidence that the bird shot at Winchelsea ever formed part of the Montagu collection as presented to the British Museum. Leach's Systematic Catalogue (1816), which contains a record of every species and every specimen presented by Montagu or any other donor, makes no mention of any Laughing Gull from Winchelsea, and the three specimens from the Montagu collection which bear that trivial name are correctly recorded as examples of *L. ridibundus*, from Lincolnshire and Carmarthenshire. It is impossible to say when or how this specimen of the American bird found its way into the British section, but it certainly shows no signs of having been mounted for upwards of a century, and its fresh appearance is in strong contrast to that of many of the genuine specimens of other birds from the Montagu collection. Mr. Gould appears to have been the first to assume that this was Montagu's bird (B. of Eur. pl. 426); and the late Mr. G. R. Gray (List Brit. Birds, p. 172) went so far as to enter it as "*a* Winchelsea"; but even he did not venture to state that it had ever belonged to Montagu. Judging from Montagu's own description, it seems almost established that the immature bird shot at Winchelsea was not the American Laughing Gull at all; and it is quite clear that it cannot be identical with the nearly adult specimen now representing it in our Natural History Museum. Other reported occurrences have never been authenticated, and are unworthy of serious consideration; one announced in 'The Times' a couple of years ago as shot near Newmarket, proved to be merely a handsome specimen of *L. ridibundus.* The statements by Temminck and others that *L. atricilla* had been found in the Mediterranean, were due to a misconception; and Pallas augmented the confusion by applying this name of *L. atricilla* to our Black-headed Gull, *L. ridibundus.* There is really no evidence that the American species has ever strayed from the shores and islands of the New World; and certainly no authenticated example killed on the coasts of Europe is known to exist in any collection on the Continent. The bird is therefore excluded from the present Edition.

The vignette below was taken from a pen-and-ink sketch sent to the Author by Sir Charles Anderson, to illustrate the breeding-ground of the Black-headed Gull referred to, at Twigmoor, near Brigg, Lincolnshire.





Larus ichtyaetus, Pallas.*

THE GREAT BLACK-HEADED GULL.

This south-eastern species, by far the largest of the Black-headed Gulls, has undoubtedly straggled on one occasion to the coast of England. Its occurrence was recorded in 1859 by Mr. F. W. L. Ross of Topsham (Ann. & Mag. N. H. (3), iv. p. 467), who stated that "one was shot by a boatman, Mr. W. Pine, when employed by W. Taylor, Esq., of Bridgewater, who was engaged in fishing for bass in the river off Exmouth, about the end of May or beginning of June last: it was in company with a flock of ordinary Gulls. Its remarkable size and appearance attracted the attention of the boatman, who, having his gun with him, singled it out, and fortunately obtained the bird, which has since been kindly presented by the above-named gentleman to the writer." It is now in the Exeter Museum, where it has been examined by many ornithologists, including the Editor. It is an adult in full summer plumage, and although its appearance on our shores is remarkable, the bird cannot be suspected of having escaped from confinement, for no instance is known of its having been kept in captivity.

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* Reise Russischen Reichs, ii. p. 713 (1773).

The Great Black-headed Gull appears to be unknown in the Mediterranean, with the exception of that extreme eastern portion known as the Levant, and it is decidedly rare in the Black Sea. It is common in Egypt, and as far up as Nubia; and it occurs on the Red Sea; Canon Tristram obtained it on the Lake of Galilee, and it probably passes along the Euphrates Valley to the Persian Gulf, and the coasts of Baluchistan. Its best known breeding-quarters are on the islands and low-lying shores of the Caspian Sea, and the lakes of Turkestan; Dr. Finsch noted its arrival on the Ala-Kul, a little to the east of Lake Balkash, on the 9th of May, on the Tentek River on the 18th of May, and on the Saisan-Nor on the 2nd of June. In Mongolia, Prjewalsky observed it on the Koko-Nor in 180° E. long., fishing on Lake Buhaingol, which is its eastern breeding limit, but it does not occur on the Amur or in China. Immature birds assigned by Cassin to this species were obtained by Perry's Expedition in Yedo Bay, Japan, but no subsequent observers have met with it in Japanese waters. On migration and during the cold season, it passes over the mountains by Gilgit, and visits the coasts of India down to Ceylon and Burmah, specimens in full breeding-plumage having been obtained 600 miles up the Irrawaddy River.

Although numbers of the eggs of this species have been sent to oologists from the Moravian colony at Sarepta through Herr H. F. Möschler, yet few details are known respecting its breeding-habits. Pallas says that it lays its eggs on the bare sand without any nest; they are three in number, measuring 2·95 by 2 in., and are stone-drab in colour, streaked and blotched with umber and black. The young are said by Eversmann to be hatched in June. Both Pallas and Prjewalsky describe the cry of this bird as being a harsh and raven-like croak, and the latter states that the bird is of a very quarrelsome nature.

The adult in breeding-plumage has the bill orange-yellow, turning to red at the mandibular angle, in front of which is a transverse black bar; gape and eyelids vermilion; irides dark brown; entire head and upper part of the neck jet black; a white crescentic patch behind the eye; lower neck, upper back, tail, and entire under-parts, pure white; wing-coverts and mantle dark grey; first primary quill-feather principally white, with a black streak along the greater portion of the outer web, and a patch of the same colour on the inner web next to the shaft about an inch and a half from the tip; on the second, third, and fourth primaries the black forms a bar with broad white tips; upper primaries white, turning to pearl-grey on the inner margins and centres; secondaries broadly tipped with white, forming a very distinct bar by contrast with the grey wing-coverts; legs and feet greenish-yellow; webs orange.

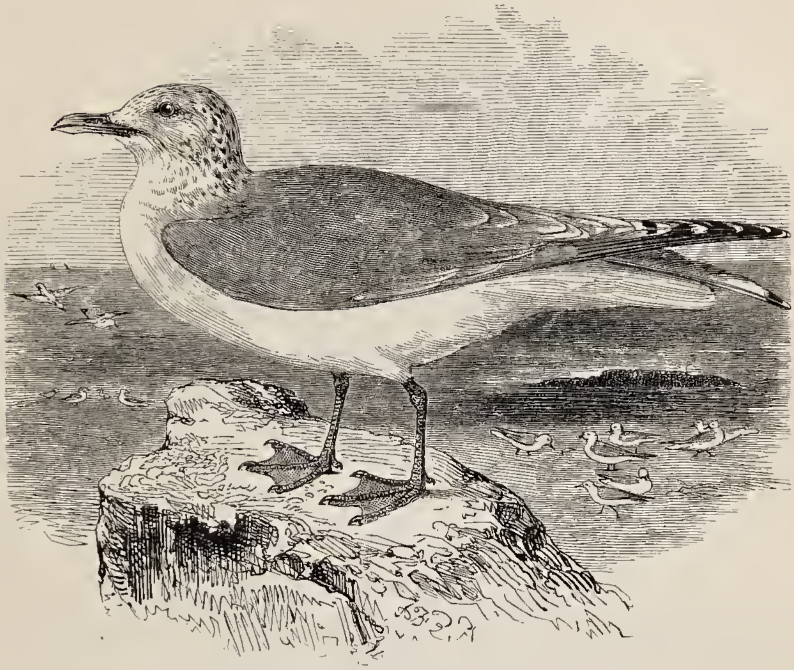
Total length of a male twenty-seven inches; wing, from the carpal joint to the tip, nineteen inches. There is, however, considerable variation in size, and females are often so much smaller than the males as to have given rise to the belief that they belonged to a distinct species. Schlegel has described one of these from Bengal as *L. ichthyaëtus minor*, and Mr. A. O. Hume has apparently distinguished a similar small example by the name of *L. innominatus*.

Less mature birds are characterized by the larger amount of black in the primaries; and in the immature bird, when assuming the black hood for the first time, the primaries are mostly blackish-brown, with only a sub-apical patch of white on the outer one; the mantle is grey, with brown markings on the carpal joints, and at the tips of the tertials; tail white with a black bar; rest of the plumage as in the adult; bill olive.

The young bird of the year is mottled with brown on the upper parts, which gradually turn to grey; and the primaries are dusky-brown; the secondaries are brown, broadly tipped with white, and they are also margined with white on both webs for a long way up each feather. This is one characteristic which serves to distinguish the young of this species from immature examples of the Siberian Herring Gull, *Larus affinis*, which is found to some extent over the same area; another mark of distinction exists in the tail, which presents a broad uniform dark band (only the outer feathers being edged with white), whereas in *L. affinis* the tail is mottled with dark markings, and the band is completely broken up.

The nestling differs from the young of all other Gulls of the same size, in being of a uniform greyish-white above, and clearer white below; the bill, black with yellowish-white tip; legs and feet, dark brown.

This species concludes the group of the Gulls with hoods which inhabit or visit the British Islands. The hooded species have been separated from the other Gulls under several generic names, but the only one which has been properly restricted to this group is *Chroïcocephalus*, Eyton (Brit. Birds, p. 53). This genus was based upon "the coloured hood, small size, and more naked tibia"; but the latter characteristic only holds good with regard to a limited number of the hooded Gulls, and is by no means confined to them; whilst the question of small size is at once disposed of by the giant just described. Kaup saw this inconsistency, and promptly remedied it by creating a fresh genus, *Ichthyaëtus*, for the above species! The hood is certainly not a structural distinction, nor does it even exist throughout the whole year; and for these and other reasons which it is unnecessary to mention in detail, it seems advisable to place these Gulls with the rest in the genus *Larus*.



LARUS CANUS, Linnæus.*

THE COMMON GULL.

Larus canus.

THE COMMON GULL, as this species has long been termed, is only doubtfully entitled to its trivial name, and few epithets have caused wider error with regard to its distribution during the breeding-season. In England it is certainly 'common' on the coasts, from autumn to spring, and it is frequently to be observed many miles inland, following the plough in search of insects and grubs; but with the approach of April, the productive birds take their departure northwards, and only a few immature or barren birds remain. During the summer the 'common' species are either the Herring Gull or the Kittiwake; and, without making any dogmatic assertions, the Editor can safely say that during the past twenty years in which his attention has been given to the question, he has failed to obtain any proof whatever of the nesting of *Larus canus* on any part of the English coast. Nor is the evidence satisfactory as to the asserted nesting of this species in the cliffs of St. Abb's Head, or indeed in any precipitous cliffs whatever, in the ordinary acceptation of the words. The Common Gull selects, as a rule, the comparatively low shores of small islands, either on the sea-coast, or up the arms of the sea; and it is also partial to grassy islands in lochs; but although its nests may be found on broken ground or even on small crags, yet flat surfaces are far more to its taste. It will even resort to low trees and bushes, and is very different in its habits from the precipice-loving Kittiwake with which it has frequently been confounded. Nowhere in the British Islands is it so abundant as on the coasts, islands, and both salt and fresh-water lochs of Scotland, where it is known as the 'Blue Maa'; and tarns in the most desolate moors, often at considerable elevations, are frequently enlivened by its colonies. It is in Scotland alone that, throughout the year, it merits its appellation. In Ireland its authenticated breeding-places are far less numerous than might be expected, and the 'common' Gull of the peasantry generally proves to be the Black-headed species; but there is fair evidence that *L. canus* breeds, or used to breed, on some of the inland lakes in Donegal. Mr. R. Warren found a small colony on Lough Talt in the Ox Mountains, co. Sligo, in the summer of 1855; and he has recently discovered another breeding-haunt in a small lough in co. Mayo (Zool. 1882, p. 241). It seems probable that this species breeds on some low islands in Tralee Bay; and Mr. Ussher believes that it nests on the Saltees, off co. Wexford. When the sister-island is thoroughly explored by competent naturalists, more breeding-places of the Common Gull will probably be discovered.

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* Syst. Nat. Ed. 12, i. p. 224 (1766).

During the greater part of the year this species is abundant on the coasts and estuaries, and owing to its being one of the first to seek the shore on the approach of heavy weather at sea, it has been made the subject of various rhymes and poetical allusions. As a rule it does not go far from land, but gets its living by picking up small sand-eels, young herrings, stranded fish, mollusks, crustaceans; and, as before observed, grubs, in pursuit of which flocks of this Gull may often be observed feeding with Rooks on the furrows. Under these circumstances, it will, like other species, pick up grain to a limited extent; and in a Gull kept by John Hunter, and brought by degrees to feed entirely on corn, the stomach, which is now preserved in the Museum of the Royal College of Surgeons, was found to have the muscular parietes considerably thickened.

The Common Gull makes rather a large nest, whether on marsh or rock, of sea-weeds, heather, grass, and sea-pink, somewhat neater, according to Saxby, than the nest of the Lesser Black-backed Gull which frequents similar localities. He adds that a favourite site is a grassy slope facing the sea, not very far above high-water mark. The eggs are normally three in number, and their usual colour is a dark olive-brown spotted and streaked with darker brown and black, but varieties with ground-colours of pale blue, pale straw-colour, and light green are not uncommon. The average measurements are 2·25 by 1·5 in. The young are hatched in June, and, like other nestling Gulls, are able to run and conceal themselves as soon as hatched. A female in the possession of Dr. Thackeray, the Provost of King's College, Cambridge, had for several seasons following laid one or more eggs; two Duck's eggs were placed in her nest in the summer of 1844, upon which she sat steadily, and both were productive. One of the young Ducks died at the hatching-time, the other she reared and attended constantly.

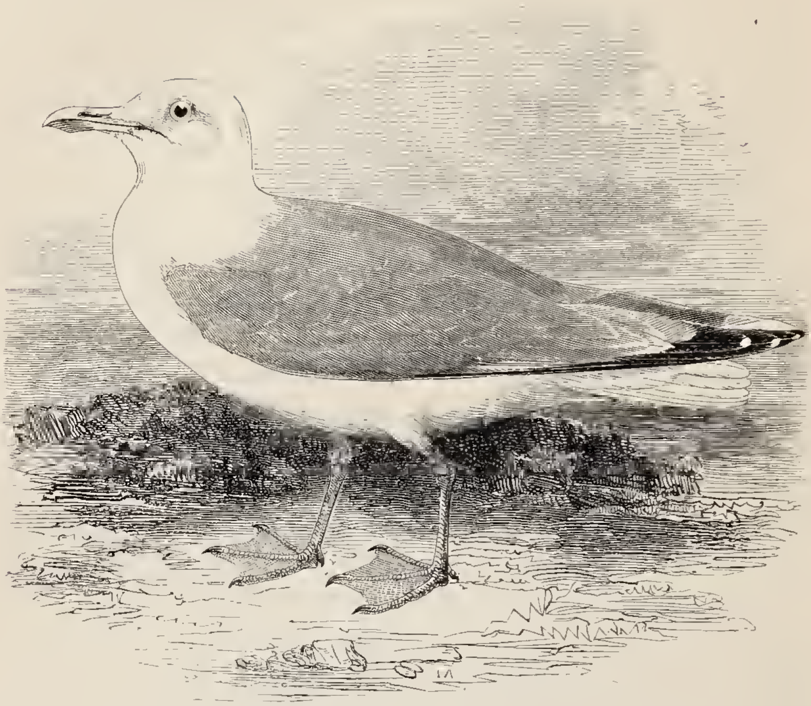
The Common Gull appears to be only a spring visitant to the Færoes, and Major H. W. Feilden did not observe it during his tour in those islands; nor is it more than a straggler to Iceland. It is exceedingly abundant in Norway up to the North Cape, breeding both on the coast and on the fjeld lakes; also in Sweden, Finland, the islands and coasts of the Baltic, and Northern and Central Russia. On migration, and in winter, it occurs on the coasts and inland waters of Europe down to the Mediterranean, the Black Sea, and the Caspian; and it also visits the shores and lakes of North Africa and Asia Minor. In Siberia a large race with a somewhat darker mantle is found, which has been distinguished by several different specific names, but the Editor is unable to admit its validity. It would appear that the greatest development is attained in the north and east; but in Japanese and Chinese waters all sizes are found; and the colour of the mantle, which is very variable, becomes lightest in western individuals, accompanied by a corresponding deterioration in size. On the American side of the Pacific, from the coast to Great Bear Lake, it is replaced by a closely-allied, but separable and smaller species, which goes by the name of *Larus brachyrhynchus*, Richardson. This, in its turn, gives place throughout the rest of North America to *Larus delawarensis*, Ord, a species rather larger than *L. canus*, with a lighter mantle, and a stouter bill transversely double-zoned. An immature example of our Common Gull was, however, obtained at Henley Harbour, Labrador, on the 21st of August, 1860 (P. Z. S. 1878, p. 178); but with that exception this species has not been known to occur in North America, nor even on the islands of the Atlantic.

In the fully adult bird in summer the bill is greenish-yellow at the base, rich yellow towards the point, irides golden-brown, edges of the eyelids red; the whole head and neck pure white; the back and all the wing-coverts pearl-grey, secondaries and tertials the same, but broadly edged and tipped with white; primaries black on the outer web, with a small portion of pearl-grey at the base of the inner web, the proportion of grey increasing on each primary in succession; the first and second primary with a patch of white on both webs near the end, but the tips of both are mainly black; the third, fourth, fifth, and sixth have white tips, followed by a broad black bar, surmounted by a patch of white blending into grey. Tail-coverts and tail-feathers pure white; chin, neck in front, breast, and all the under surface of the body and tail pure white; legs and feet greenish-yellow. The colours of the soft parts, which fade soon after death, were taken by the Editor from a fully adult bird, shot in Norfolk on the 21st of August. In the winter the whole head and the sides of the neck are streaked and spotted with dusky-brown and ash-brown: and the legs and feet are olivaceous.

The whole length of an old male is eighteen inches and a half; of the wing from the point, fourteen and a quarter inches. The length of an old female is about one inch less, and of the wing half an inch less.

A young bird in its first autumn has the basal portion of the bill yellowish-brown, the part anterior to the nostrils nearly black; irides dusky; head, sides of the neck, the ear-coverts, and occiput dull white, mottled with greyish-brown; the back, wing-coverts, secondaries, and tertials brownish-ash, the feathers edged with paler brown; a few bluish-grey feathers on the centre and sides of the back; the primaries dark brown, both as to the shafts and greater part of the webs; upper tail-coverts dull white; tail-feathers white, broadly barred with dark brown, except the outer feather on each side, which has the outer web mainly white; chin and throat white; neck in front, the breast, and all the under surface of the body mottled with light ash-brown, on a ground of white; legs and feet pale yellowish-brown, the claws black. With the following moult the band on the tail gradually disappears, and the new outer primary on each side shows a slight sub-apical white spot or 'mirror'; with successive moults this mirror increases in size, and also appears successively on the second and even on the third primaries.

The young in down is, like many other nestling Gulls, of a greyish-buff spotted with black, but Saxby says that it may be distinguished from the Lesser Black-backed Gull by the presence of dark marks immediately above and below the eye.



Larus argentatus, Gmelin.*

THE HERRING GULL.

Larus argentatus.

The Herring Gull is a resident and generally distributed species on the coasts of the British Islands; and on the lofty cliffs of the south coast, from Beachy Head to Cornwall, it is more numerous in the breeding-season than any other kind of Gull. It is very abundant at Lundy Island in the Bristol Channel; also on the coast of Wales, where there is an especially large colony on the Stacks off Holyhead; it breeds on the cliffs of Cumberland, and, according to Mr. A. Durnford (Zool. 1879, p. 339), on Foulshaw Moss, near Arnside, in Westmoreland, in proximity to a far larger colony of Lesser Black-backed Gulls. On the east coast suitable localities are scarce south of Flamborough in Yorkshire; and on the Farne Islands, off Northumberland, its numbers are very small in comparison with those of the Lesser Black-backed Gull. On the coasts and islands of Scotland, its breeding-stations are frequent, and colonies may be found on the isolated rocks or 'stacks' with the Great and Lesser Black-backed Gulls. In Sutherlandshire and some other districts, it not only resorts to the cliffs, but also to islands in lochs and the marshy ground in their vicinity, together with the Lesser Black-backed Gull; but in these comparatively inland situations it is less abundant than that species. Along the lofty maritime precipices of Ireland the Herring Gull has numerous breeding-haunts.

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* Syst. Nat. i. p. 600 (1788), ex Brünnich.

The nest of this species is formed of grass, and, in rocky places, it is usually placed on the upper ledges of the cliffs; but, as already stated, flat islands are sometimes selected; and in North America this bird has been known to nest in trees, in localities where its eggs had been repeatedly plundered by fishermen when placed upon the ground. The eggs, usually three in number, are of a stone-colour or light olive-brown, blotched and spotted with dark umber; average measurements 2·9 by 1·95 in. Sometimes their ground-colour exhibits a greenish tinge; in others it is pale unspotted blue; and in some districts varieties are obtained year after year of a yellowish salmon-colour with slightly darker freckles. As a rule the eggs are larger than those of the Lesser Black-backed Gull; and they are laid much earlier: often by the first week in May.

From its partiality to fish, and its habit of following the shoals of herrings, this species has acquired its trivial name of Herring Gull; and during the winter both young and old may be seen along our coasts, hovering above the young fry, or resting on beaches and sandy spits. In spring it may be observed on ploughed land searching for worms, grubs, and insects; and at that season, and after heavy weather, it often goes far inland. Its principal food is, however, obtained on the sea-shore, and consists of fish, crustaceans, mollusca, radiata, and anything cast up by the tide; and this Gull has frequently been seen to carry clams and mussels to a considerable altitude, and let them fall upon the rocks in order to break the shells and get at the contents. Like all the large Gulls, this species is a great robber of eggs, and the ledges frequented by Guillemots, Gannets, and other sea-birds, are swept bare on the first opportunity; nor are the nests of grouse, wild-geese, and ducks exempt from its depredations.

The Herring Gull has often been known to breed in captivity; and a hybrid between it and the Lesser Black-backed Gull will be noticed under the latter species. It appears to attain a considerable age, for Mr. S. A. Brenan of Cloughban, Pomeroy, writing in 'Science Gossip,' 1876 (p. 238), says that Miss Ross, of Limavady, had one then living which was taken from the nest in 1832.

Our Herring Gull is one of the members of a group which, when taken in a wide sense, may be said to consist of several geographical races or forms, but inasmuch as distinctions between them, however small, can fairly be indicated, it is convenient to consider them as species, and by scientific names. Their specific characteristics are a lighter, or a darker, mantle and pattern of the quill-feathers; the colour of the legs and feet; and that of the ring outside the eye. There can be little doubt that the intensity of coloration—or the reverse—is to some extent dependent upon climatic conditions; and consequently it is in the northern portions of Europe, in the islands of the Atlantic, and in North America, that we find the present species, as characterized by a *pale* pearl-grey *mantle, flesh-coloured* legs and feet, and the *ring* outside the eye of a *light yellow*. Its range may be defined as extending from the Baltic and the Varanger Fiord, down the western coasts of Europe, to North Africa, Madeira, and the Canaries in winter; and to the Azores, where it breeds. To Greenland it is a rare straggler; but a specimen obtained by Dr. Rae at Repulse Bay, Melville Peninsula, is in the British Museum; and the range of this species probably extends across that portion of the continent which lies south of the Arctic circle, for Vosnesensky obtained it at Kodiak. Examples from high northern latitudes have even a somewhat paler mantle than those from more temperate regions, although the transition is very gradual; and this light form has received the name of *L. argentatoides*. From British Columbia to Lower California our Herring Gull is replaced by a very distinct member of the same group, *L. occidentalis*, Audubon, with a mantle as dark as that of many examples of the Lesser Black-backed Gull, from which species it may be distinguished by its stouter bill, coarser, flesh-coloured feet, and by the pattern of the primary quills, which is, on the whole, akin to that which prevails in the grey-mantled division. From Labrador southwards, the Herring Gull occurs on the coast, inland lakes, and large rivers of North America, down to Texas, Cuba, and the Bermudas, and it probably crosses Mexico, as examples have been obtained on the Pacific side of Central America.

On the more sun-lit southern coasts of Europe—commencing at western France, continuing along the Iberian Peninsula, and throughout the Mediterranean—we find a resident species, *L. cachinnans*, Pall. (*L. leucophæus*, Lichtenst.), characterized by a *darker* mantle, *yellow* legs and feet, and a *ring* round the outside of the eye of a deep *orange-red*; but presenting no constant difference in the pattern of the primaries. This form goes up the Black Sea, and its breeding-range extends across the low-lying salt-lake districts of Russia from the mouths of the Volga and the shores of the Caspian, as far north as the province of Archangel; across the Ural river and the Kirghis steppes, to the Irtisch and Lake Baikal; and to the Asiatic and Alaskan shores of the Pacific. It migrates from the north in winter to the coasts of Arabia, India, China, and Japan; and it has been erroneously identified with the very local *L. occidentalis*, Audubon: a species which has never been known to stray from the American side of the North Pacific.

Another member of this group is the Siberian Herring Gull, *L. affinis*, Reinhardt, named from a solitary specimen obtained in Greenland, but its habitat and breeding-places were not known until the return of Messrs. Seebohm and Harvie-Brown from the Petchora in 1875. The series of skins obtained by these energetic naturalists threw a light upon many points in distribution which had hitherto been obscure; and through the subsequent observations of Mr. Seebohm, Drs. Finsch and Brehm, and others, some accurate knowledge of its distribution was attained. It proved to be a visitor for breeding purposes to Northern Siberia, from the White Sea to Kamtschatka, and to the steppes and mountain lakes which lie to the north of the great Asian range. It passes the cold season in the waters of South-eastern Europe, North Africa, Arabia, India, China, and Japan; and as Mr. Gätke has obtained it in Heligoland (Ibis, 1878, p. 489), it is very likely to visit the British Islands. Its *mantle* is *dark slate-colour*, resembling that of pale examples of *L. fuscus*, and the *legs* and *feet* are *yellow* as in the latter species; but the foot is slightly larger in proportion, and a 'wedge' of grey colour is present in the upper part of the outer primaries, whereas there is no 'pattern' of that kind in the outer quill-feathers of the Lesser Black-backed Gull. It is also a larger bird, and was indeed at first identified by Dr. Finsch with *L. marinus*.

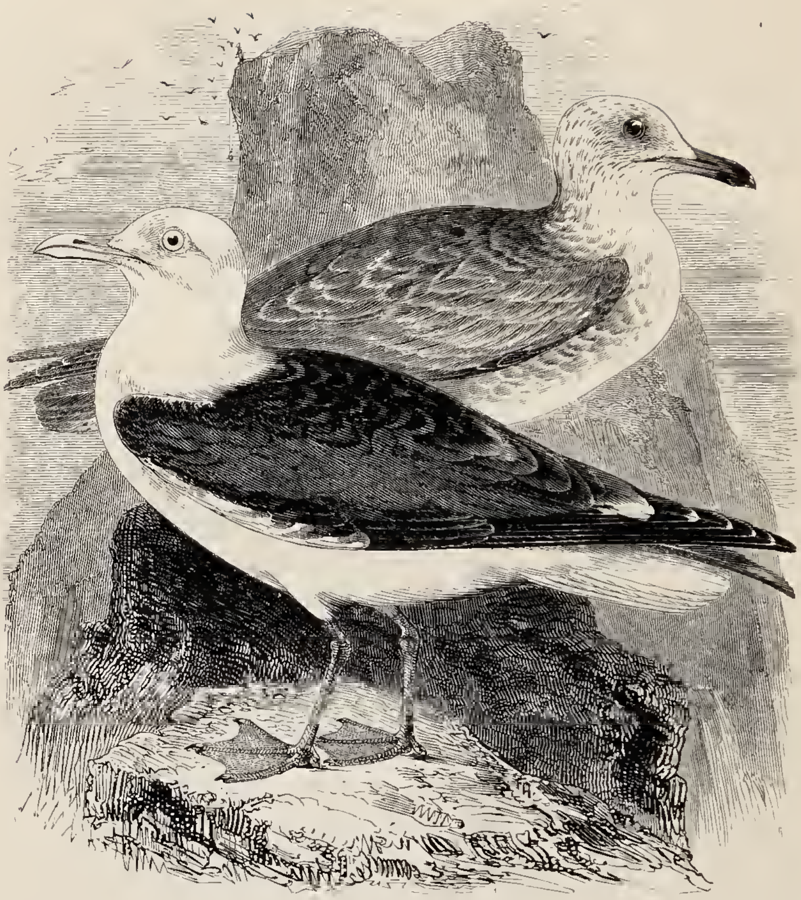
The adult Herring Gull in summer has the bill yellow, the angle of the under mandible red; edges of the eyelids yellow, the irides straw-colour; head and neck, all round, pure white; the back, and all the wing-coverts uniform delicate french-grey; tertials tipped with white. In very old individuals the outer primary is mostly black, with a grey 'wedge' running from the base down the inner web; the tip is white for fully two inches; in the second a broad white sub-apical patch or 'mirror' connects with the grey inner web, and is cut off from the white tip by a black bar; the third, fourth, and fifth primaries are barred with black; the rest are grey tipped with white. In younger birds there is less white on the primaries. Upper tail-coverts and tail-feathers pure white; chin, throat, breast, belly, and all the under surface of the body and tail pure white; legs and feet flesh-colour.

In winter, even the adults have the head streaked with dusky-grey; but less so than in younger examples.

The whole length is from twenty-two inches to twenty-four and a half, depending upon age and sex; the wing from sixteen inches and a half to seventeen and a quarter. The male is often considerably larger than the female.

In a young bird of the year, killed on the 4th of August, the upper parts were of a mottled-brown tipped with buff; tail whitish, broadly barred with dark brown margined with white; primaries sooty-brown. In the second year, the upper parts are distinctly barred with brown on a whitish ground; the primaries show faint white tips, with a greyish tint on the inside webs; mantle greyish, but no entirely grey feathers have yet begun to show; head nearly white, streaked with greyish-brown. In the third year a bird shot on the 3rd November, had the feathers of the mantle of a pale grey, slightly streaked down the shafts; some of the tail-coverts white; a faint sub-apical white spot just showing in the outer primary of the left wing only. In a bird of the fourth year, also shot on the 3rd of November, the mantle was grey; the sub-apical patch larger; and the primaries from the fifth upwards were distinctly barred black and white at the tips; tail merely mottled with greyish-brown, the band being broken up. At the autumn moult of the next year the brown feathers are lost, and the bird breeds in the following summer, when within a month or so of completing the fifth year of its age.

The nestling is covered with a down of a greyish-buff, streaked and spotted with black on the upper parts, especially about the head and throat; but the dimensions of these marks vary much with age.



Larus fuscus, Linnæus.*

THE LESSER BLACK-BACKED GULL.

Larus fuscus.

The Lesser Black-backed Gull is another well-known species of general distribution along our coasts; but during the breeding-season it is far more local than the Herring Gull. Both birds are not unfrequently to be found nesting in tolerable proximity, but the Lesser Blacked-backed Gull generally chooses the grassy slopes above the more precipitous cliffs to which the Herring Gull resorts. Comparatively flat-topped islands are especially to its taste, as well as isolated stacks of rocks; and it is very partial to islands in lochs. In England, where suitable situations are somewhat rare, its breeding-places are few and far between; none being positively known on the east coast to the south of the Farne Islands; nor in the south until we come to Devon and Cornwall. At Lundy Island, which belongs to the former county, a good many make their nests among the coarse herbage of the upper slopes. On the coast of Wales there are several colonies; it breeds on the Isle of Man; there is, or was, a colony on an island in Ulleswater; and in Cumberland it is so numerous on Bowness Moss, Solway Flow, and Wedholme Flow, that the eggs are largely destroyed by the keepers to prevent the undue increase of this rapacious bird. It is also banished, so far as possible, from the moors of Northumberland, but on the Farne Islands it nests by hundreds, its congener the Herring Gull being very rare there.

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* Syst. Nat. Ed. 12, i. p. 225 (1766).

In Scotland the Lesser Black-backed Gull is very abundant, and, with the exception of a considerable portion of the east coast which is unsuited to its habits, colonies may be found scattered—far too numerously for game preservers—over the moorlands, lochs, and islands from the Shetlands to the Solway. Over this area it is a commoner species than the Herring Gull, but in Ireland the proportions are reversed, and but few breeding-places of the Lesser Black-backed Gull are known, although both young and old are resident throughout the year.

Speaking of Lesser Black-backed Gulls on the Farnes, Mr. Hewitson observes, that the birds "appear to prefer those islands which are the most rocky, and upon which there is the least herbage, and though they have their choice, very few of them deposit their eggs upon the grass, and yet they rarely lay them without making a tolerably thick nest for their reception; it is of grass, loosely bundled together in large pieces, and placed in some slight depression or hollow of the rock. Amongst upwards of one hundred nests that I examined, one or two only had small pieces of sea-weed mixed with the other materials. They lay two or three eggs, varying in their shades of colour from a dark olive-brown to a light drab, thickly spotted with ash-grey, and two shades of brown; the length of the egg about two inches ten lines, by one inch and eleven lines in breadth [2·8 by 1·9 in.]. After they have begun to sit, they become very bold in the defence of their eggs; whilst among them, I was amused with one, near the nest of which I was sitting; it retired to a certain distance, to give it full force in its attack, and then made a stoop at my head, coming within two or three yards of me; this it continued to do, incessantly, till I left it.* Mr. Darling [father of the celebrated Grace Darling], the keeper of the light-house on the island, informs me that an old woman who was in the habit of gathering their eggs, had her bonnet almost torn to pieces, it being perforated throughout by their bills." This species is later in laying than the Herring Gull, fresh eggs being found well into June. Mr. Selby observes "that the young, upon exclusion, are covered with a parti-coloured down of grey and brown; but this is rapidly hidden by the growth of the regular feathers, and in a month or five weeks they are able to take wing." The young birds of former seasons, while yet immature in plumage and incapable of breeding from want of sufficient age, are not permitted by the adult and breeding birds to inhabit the breeding-stations during their breeding-season, but are driven away to other localities.

Small surface-swimming fishes, upon which these birds precipitate themselves from the air, and animal substances floating, or brought to shore by the tide, form their most usual food, but both old and young are seen occasionally to go inland from the coast, to search moist pastures, or recently-ploughed fields, for worms, insects, and their grubs. Mr. T. E. Buckley says of this species in Sutherlandshire, that it eats a great deal of grain in the spring months, as may be seen by a visit to the localities in which it breeds, for it casts up the husks in 'quids' as Rooks do. Fish and small crabs are brought up from the shore, and on two occasions these birds robbed a Goose's nest which Mr. Buckley was anxious to obtain. As it is more of an inland breeder than the Herring Gull, it is especially injurious to the eggs and young of moorland game and waterfowl, and on the coast it rivals its congener in its depredations on the eggs of Guillemots and other sea-birds.*

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* The Editor had a similar experience at Lundy Island, and was obliged to strike a bird several blows with the ramrod of his gun before it would desist.

A bird of this species, kept in confinement, is thus spoken of by the owner :—"He has the full range of a large garden, his escape being only prevented by having his wing cut; but he constantly prefers the neighbourhood of a large network cage, the residence of a pair of silver pheasants; not very congenial companions, one would suppose, for a roamer of the ocean. But such is the fondness of almost all animated beings for society of some kind or other, that, when that of their own species is out of reach, they will often attach themselves to creatures of a very different character. Near his gallinaceous friends our Gull always sleeps, seldom straying to any considerable distance; though he seems to enjoy, at times, using his wings to the utmost of his ability; half flying, half running, in all directions, apparently for mere amusement. He is, however, very tame, and will, when hungry, follow any of the family about the garden uttering a peculiar cry, which always means that he is quite ready for a meal. Indeed, he has a most voracious appetite, and the capacity of his throat is truly astonishing; he has repeatedly swallowed quite whole, with beak, claws and feathers, various small birds which had been shot and thrown to him. Mice, or other small quadrupeds, appear equally to suit his taste; and, though he has no objection to butcher's meat, he seems rather to prefer small animals, notwithstanding the hair, feathers, &c., which sometimes give him not a little trouble to dispose of satisfactorily. The way in which he remedies this difficulty suggested itself the first time a bird was given him; I believe it was a skylark. After some ineffectual efforts to swallow it, he paused for a moment; and then, as if suddenly recollecting himself, he ran off full speed to a pan of water, shook the bird about in it until well soaked, and immediately gulped it down without further trouble. Since that time he invariably has recourse to the same expedient in similar cases."

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* Mr. Abel Chapman informs the Editor that he found a Lesser Black-backed Gull floating dead in one of the loughs at Elsdon, choked by a Wild Duck's egg which had stuck in its gullet.

The Lesser Black-backed Gull breeds abundantly in the Færoes and along the west and north coasts of Norway and Finland; and it extends from the Baltic across Russia as high up as Archangel. It is not known to breed on the coasts of Northern Germany, Denmark, or Holland, although frequenting them during the greater part of the year; but it probably nests in the north-west of France, inasmuch as it is known to do so on at least two of the smaller Channel Islands. The birds which breed in the north of Europe, inclusive of the Færoes and the Shetlands, migrate southwards on the approach of winter, and visit the coasts, inland lakes, and larger rivers of the Continent down to the Mediterranean and the Black Sea. Capt. Shelley says that this species ranges up the Nile to Nubia, returning northwards in the latter part of April, but Von Heuglin states that it is a resident in the Red Sea as far as the Gulf of Aden. It appears to be very rare, if indeed it occurs at all, on the Caspian; for the dark-mantled Siberian Herring Gull, *L. affinis*, replaces it on that great inland sea, and to the east of it, so far as is known, throughout the whole of Northern Asia in summer, and on the coasts of India in winter. All the examples recorded under the name of *Larus fuscus* from the coast of Baluchistan and Sind have proved to be *L. affinis*, which was, probably, Jerdon's so-called *L. fuscus* procured in the Deccan; such are, certainly, the birds so named by Dybowski from Dauria; and the statement that *L. fuscus* occurs in China has been thoroughly disproved (P. Z. S. 1878, p. 174). The eastern range of this species cannot therefore be traced beyond the Caspian. To the westward it is recorded by Mr. F. D. Godman as observed in pairs in May at Teneriffe, and at Madeira in June; Col.

Irby says that a few remain to nest on the shores of Morocco in April; and the Editor has examined specimens obtained in May so far south as Senegal. Statements that this species has occurred in America appear to be quite unfounded.

The adult bird in summer has the bill yellow, the inferior angle on the lower mandible red; irides straw-yellow; head, and the whole of the neck, all round, pure white; back, wing-coverts, and all the wing-feathers very dark slate-grey; the longer scapulars, tertials, and secondaries broadly tipped with white, forming a distinct band; upper primaries broadly, and lower primaries slightly, tipped with white, except the outer one; a sub-apical white mirror on the outer primary, and, in very old birds, on the second one also; upper tail-coverts and tail-feathers white; breast, belly, and all the under surface of the body and tail pure white; legs and feet yellow.* The shortness of the foot as compared with the tarsus is characteristic. In the three outer primaries the inner web becomes paler towards the edge, but there is no grey wedge to form that pattern which distinguishes the Herring Gulls. In shade of mantle there is much variation, some northern examples being in this respect as light as *L. affinis;* on the other hand, Egyptian specimens are very dark with remarkably bright yellow legs, owing probably to climatic influences. In winter the head and neck are streaked with dusky-brown. The whole length of a male is twenty-three inches; from the anterior joint of the wing to the end of the longest quill-feather sixteen inches. The female is generally less.

The young bird is very similar in plumage to the immature Herring Gull, but the general tint of the upper parts is darker, the primaries are of a nearly uniform black, and the tail is black with white mottlings only on the upper parts, and on the outer feathers on each side. With increasing age this dark band breaks up and finally disappears. The legs and feet, which are first light brown, very soon assume a yellowish tinge. This species takes three years in arriving at its adult plumage, and breeds when all but four years old. The young in down are similar to those of the Herring Gull.

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* In the 'Zoologist,' 1882, p. 70, is the record of an adult bird shot in October, which had the leg and foot on one side bright yellow, and on the other flesh-coloured.

In confinement a female Lesser Black-backed Gull has been known to pair with a male Herring Gull, and on the offspring of this union Mr. Cecil Smith writes as follows:—

"The hybrid between these two Gulls mentioned by me at p. 450 of 'The Zoologist' for 1881* as having been bred in my pond in May, 1880, and allowed to fly, has from that time to the present paid me frequent visits, sometimes staying for two or three days together, sometimes leaving immediately after feeding-time, and sometimes not making its appearance for weeks together. It has now so nearly reached its adult plumage that I think it worth while to give a short description of it, as I have lately had a good many opportunities of looking at it, and am always afraid each visit may be its last, as it might meet with an accident on one of its journeys to and from the Bristol Channel, though as a rule it flies very high and quite out of shot. The wing-coverts and mantle appear now to have assumed their fully adult colouring, there being none of the brown markings of the immature plumage left. The quills, however, are not those of the adult bird, though I should think after another moult they, as well as the tail-feathers, which still have a few brown markings left, would be so. The wing-coverts and mantle are very pale indeed for a Black-back, though much too dark for a Herring Gull. The legs are flesh-colour, like the Herring Gull, if anything a little brighter and more highly coloured, now showing no sign of the yellow of the Lesser Black-back. Any one shooting it and describing it might say it was a pale Lesser Black-back with the legs and feet coloured like those of a Herring Gull, but I do not think any one would speak of it as a dark Herring Gull" (Zool. 1883, p. 174). This bird was shot in the following May, and preserved.

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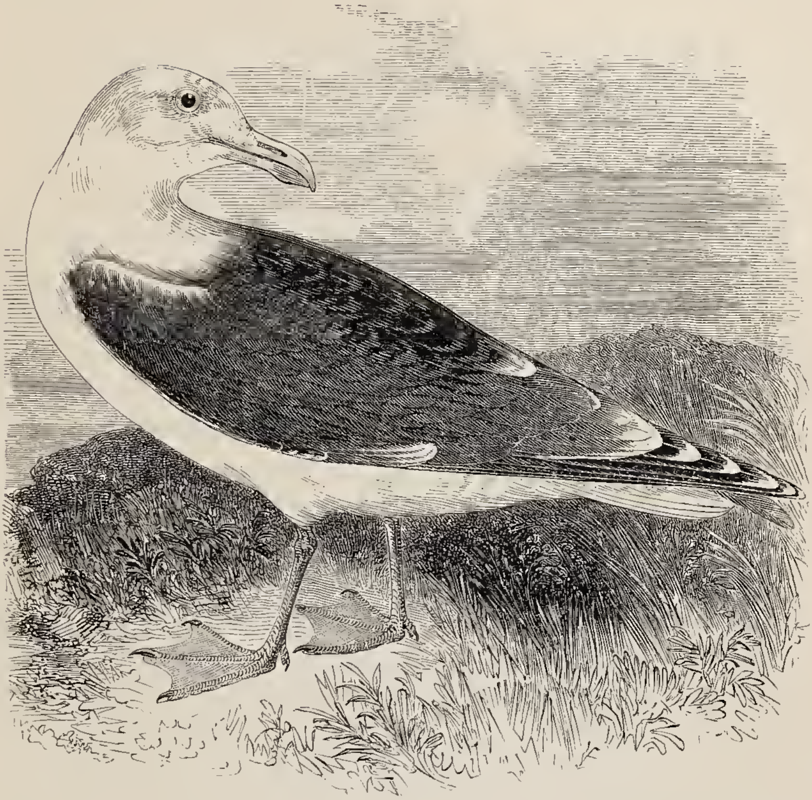
* Owing to the inversion of a figure, the year in which the Lesser Black-backed Gull was taken from the nest was printed 1879 instead of 1876. If not corrected, it would appear that this species had bred in its first year.



LARUS MARINUS, Linnæus.*

THE GREAT BLACK-BACKED GULL.

Larus marinus.

THE GREAT BLACK-BACKED GULL, though seen throughout the year on various parts of our coast, is not very numerous as a species, and is frequently observed to be solitary, or in pairs only. Dr. Turner, who wrote on British ornithology more than three hundred years ago, calls this Gull a Cob; and by this name it is still known on the flat shores of Kent and Essex, at the mouth of the Thames, where this bird remains all the year. From the Author's statement in former Editions, it would appear that in the early part of the present century this species used to nest in the marshes about the estuary of that river; but it has long ceased to do so. At the present day a few scattered pairs breed on the cliffs of Dorsetshire; and, in decreasing numbers, on Lundy Island, but the Steep Holmes, higher up in the Bristol Channel, mentioned in former Editions, have certainly been abandoned for at least forty years. Some nest on the coast of Cornwall, and in Scilly; and on the rocky coast of Wales there are several breeding-places; a colony also inhabits an islet in a small elevated llyn in the Snowdon district. On the east coast of England no breeding-place is known to exist; but the old birds, generally in pairs, and the young, are found in considerable numbers from July to the following spring, when the former retire northwards to breed.

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* Syst. Nat. Ed. 12, i. p. 225 (1766).

In Scotland the Great Black-backed Gull is far more abundant, especially in summer, on the deeply indented coasts and islands of the north and west. A few are said to breed on Ailsa Craig in the Firth of Clyde; and Mr. R. Gray says that twelve or fourteen pairs annually take up their quarters on the island of Inchmoin in Loch Lomond. Other breeding-places are scattered along the coast of the mainland and on the inland lochs up to Sutherlandshire, where, however, the species is not very common; but in the Hebrides there are many, both on the isolated 'stacks' and on the small grass-covered islets of the fresh- and salt-water lochs. In the Orkneys its nesting-haunts are comparatively few; but there are a considerable number in the Shetlands, one of the most interesting being on the flat top of the 'stack' known as the Holm of Noss, to which access was formerly obtained by means of a cradle slung on two parallel ropes.

In Ireland this species is found upon the coast throughout the year, and, according to Thompson, it is much more abundant in Belfast Lough than the Lesser Black-backed Gull. Its breeding-places are scattered along the rocky coast, but no considerable colonies such as those of Scotland are known.

In the Færoes, Major Feilden observed the Great Black-backed Gull breeding in isolated pairs; and in Iceland it is generally distributed, especially in the south-west; nesting on the coast and also on the fresh-water lakes. It breeds in Norway and Sweden in considerable numbers, as well as on the shores of the North Sea; and, sparingly, near Archangel, ranging as far east as the Petchora; but, with the exception of the north-west of France, no other localities are known to be resorted to for incubation on the Continent of Europe, although the species is of general distribution along the coasts; and it also occurs on the inland waters down to Sarepta on the Volga. In the Mediterranean immature birds have been obtained as far east as Greece, but adults are very rare in any portion of that land-locked sea. Westward, it ranges to the Canaries, which appear to be its southern limit. On the other side of the Atlantic it is found breeding generally throughout Danish Greenland up to 68° N. lat.; and it has been observed in Baffin Bay. Southward, it nests in Labrador, and in the eastern extremity of Maine; it occurs on the great lakes; ranges to Florida in winter; and has been obtained in the month of December in the Bermudas (Zool. 1877, p. 489). On the Pacific side it has recently been procured on two occasions—when numerous examples were observed—on the Alaskan shore of Bering Strait; and it is perhaps by this route that it reaches Japan, where several adult specimens have been obtained by Captain Blakiston. In the southern hemisphere our species is represented by *Larus dominicanus*, a bird with a very stout bill, brownish-black mantle, and olivaceous legs and feet: somewhat smaller than, but quite as voracious as its northern relative. The Dominican Gull ranges from New Zealand, by Kerguelen and the other desolate islands of the Southern Ocean, to South Africa, the Falklands, and both sides of South America.

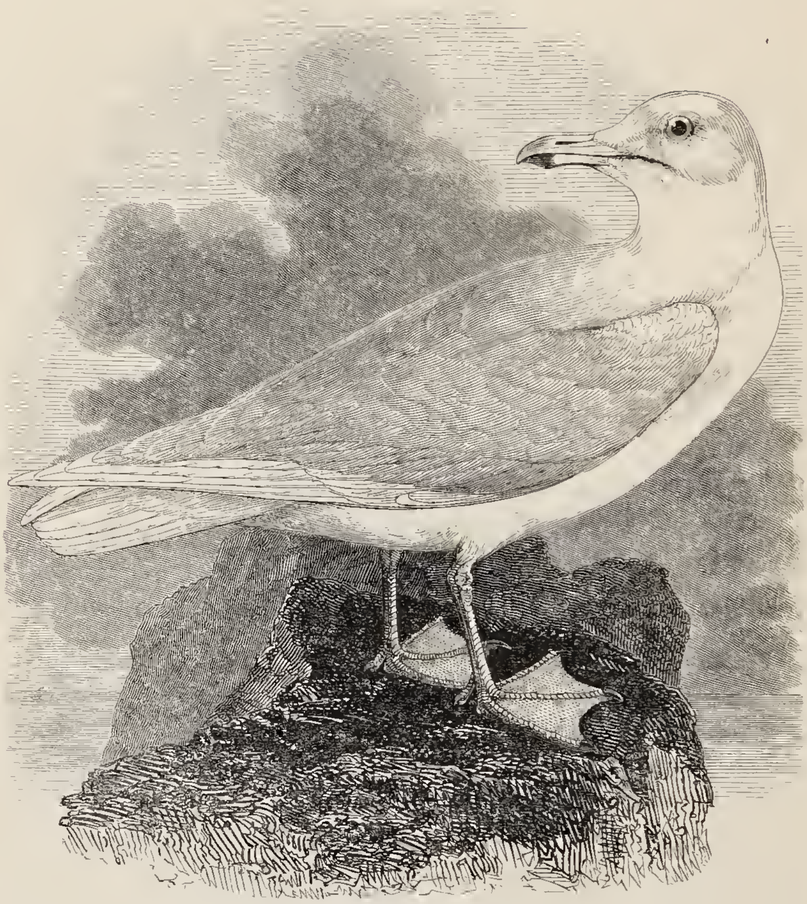
The nest of the Great Black-backed Gull is generally large in size, deeply hollowed, and formed of dry grass, sheep's-wool, and heather. Nidification commences early in May; the eggs, usually three in number, being of a yellowish-brown, boldly blotched with slate-grey and umber; and measuring on the average 3 in. by 2·1 in.; but if the first clutch is taken, the eggs of the second laying are generally smaller. The Rev. Robert Holdsworth sent the Author word that, from an egg of this species, taken off the Bolt Headland by some of the crew of the *Vigilant*, excise-cutter, and kept in a blanket by day, and near the fireplace at night for about ten days, a young Gull was hatched and reared by the crew; and for many years lived quite tame in the possession of a smith at Dartmouth. It swam in the river every day, and looked out for the fishermen returning from sea, who used to throw small fish to it. This fine species occasionally visits the inland waters of our islands, especially when in immature plumage, but the adults seldom go far from the sea, or the tidal portions of rivers.

The Great Black-backed Gull feeds on fish, and any animal matter; it has been known to destroy weak lambs; and young ducks and wounded waterfowl are swallowed whole, or, if too large, are drowned and torn to pieces. It is a terrible destroyer of eggs, and much detested by the proprietors of the localities where the Eider Ducks and other useful birds make their nests; it is also partial to carrion. Its flight is powerful, and majestic; and its loud harsh croak, or laugh, easily distinguishes it from every other species. As a proof of its strength, Mr. R. Gray states that one shot on the Farne Islands, at some distance from the water, was found to have swallowed a piece of fish about four inches long, to which had been fastened two hooks and a strong line thirty-seven feet in length, with a stone seven pounds in weight at the end. It has often been stated that this Gull gives timely warning of danger to the Seal, and Mr. A. E. Knox, in his 'Autumn on the Spey' (p. 84), has given an account of an instance which came under his observation.

The adult bird in summer has the bill pale yellow, the inferior angle of the under mandible reddish-orange, the whole bill very large and strong; the irides straw-yellow, the edges of the eyelids orange; head, neck, tail, and entire underparts pure white; back, wing-coverts, scapularies, secondaries, and tertials black with a tinge of dark slate, the feathers of the three latter series ending in white; primaries nearly black, the first quill-feather white for the lower two and a half inches; the second for rather less, and barred with black on the inner web; all the others tipped with white, the upper portions of the webs being lead-grey; upper tail-coverts and tail-feathers pure white—in less mature birds the white of the outer primary is barred across, and the second is white only at the extremity; legs and feet flesh-colour. In winter the crown of the head and the occiput are slightly streaked with ash-grey. The whole length of an adult male is about thirty inches; the wing, from the carpal joint to the end of the longest quill-feather twenty inches. The female measures twenty-seven inches, and her wing nineteen inches. The bird from which the figure here inserted was taken, was given to the Author by his friend Mr. Broderip, and was shot at Putney during the frost which occurred early in February, 1841.

The young birds in their stages to maturity resemble the young of the Lesser Black-backed and Herring Gulls, but are always much larger, their legs are paler in colour, and the light and dark markings of the plumage are more sharply defined than in the Herring Gull, with which alone they can possibly be confounded. The nestlings are so similar that no distinguishing characters can be indicated.

In the Gardens of the Zoological Society, the Great Black-backed Gull has paired on several occasions with the Yellow-legged Herring Gull, but the eggs laid have not proved fertile.



LARUS GLAUCUS, O. Fabricius.*

THE GLAUCOUS GULL,

OR LARGE WHITE-WINGED GULL.

Larus glaucus.

THIS large species, equal in size to the Great Black-backed Gull last described, was first made known as a winter visitor to the most northern of the Shetland Isles by the late Dr. Lawrence Edmondston, who obtained young and old birds of both the species of White-winged Gulls included in this work. The habits of this Gull as observed by himself are thus described :—" This species is never known to breed in Shetland. It arrives in that country about the middle of autumn, and leaves it towards the end of spring. Its favourite resorts are the entrances of the more exposed bays ; or the ocean, a few miles off the land, where it is often found assiduously attending the fishing-boats, to pick up any offal that may be thrown overboard ; and it is often taken by a line and hook baited with fish, when engaged in this pursuit. It is greedy and voracious, to a proverb ; and, when allured by carrion, which seems to be its favourite food, becomes comparatively indifferent to danger. It then quits the ocean and the headlands, enters the bays, and boldly ventures inland. Its usual deportment is grave and silent, exhibiting little of the characteristic vivacity or inquisitiveness of many of its tribe, and it is roused to exertion chiefly by a sense of danger, or the cravings of hunger. When it flies it extends its wings more, and its flight is also more buoyant than that of the other species of Gull ; and, when not in quest of food, it is of a reserved disposition, seldom coming within the range of a fowling-piece, but soars at a respectful distance, uttering, at intervals, a hoarse scream, of a sound quite peculiar to itself. It exhibits none of that remarkable instinct so predominant in many of the larger species of the genus, which prompts them frequently, at the hazard of their own lives, to warn other animals of the vicinity of the sportsman ; but when once alarmed, it commonly flies off. In the month of November, 1820, I observed a flock of upwards of a hundred of this species in the Bay of Balta Sound, in Shetland. They remained there for two or three weeks, going out to sea, in search of food, regularly, at a particular period of the tide, and returning to rest for some time in the Bay. During this time I had ample opportunity of observing their appearance and habits, and of completely confirming all the views I had previously entertained concerning them. It is in Unst, the most northerly island of the group, that I have found it most frequently, and where it is chiefly known. It is there that I have observed it first to arrive, and this most generally occurred when the wind was favourable from the Arctic regions."

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* Fauna Grœlandica, p. 100 (1780), ex Brünnich.

To this account the late Dr. Saxby adds that he has seen the Glaucous Gull in Shetland in May and June, and on the 17th of the latter month he once saw two birds in what appeared to be the second year's plumage, on the Loch of Cliff, in Unst. The first birds returning for the winter usually appeared there about the middle of October in small flocks composed of old and young, the latter predominating. In winter by far the larger proportion were young birds, nearly all the old ones habitually disappearing shortly after their arrival. This Gull frequently congregates in considerable numbers; and one day, in November 1864, he saw a flock numbering about a hundred and forty pass over, on the way southward, in the face of a gale of wind. This fine Gull is also a visitor to the Orkneys, and it sometimes occurs in considerable numbers on the east coast of Scotland. During the winter of 1872-3, large flocks were observed by Mr. R. Gray, and others (Pr. N. H. Soc. Glasgow, 1873, p. 198), in the estuary of the Forth. On the west coast, according to the same authority (B. of W. of Scotl. p. 490), this species is in general less plentiful, remaining for the most part in the vicinity of the Outer Hebrides, and seldom roaming within the circle of the inner islands. In England it is, naturally, of more frequent occurrence in the northern than in the southern districts, but examples in immature plumage are observed on the east coast down to Norfolk almost every autumn and winter, adults being much rarer. At irregular intervals it has been obtained on the entire coast of England, although less frequently in the south-west; but the fine specimen from which the illustration was taken was shot by Mr. Francis Edwards, of Bristol, in the winter of 1840, on the Severn. It has also been shot in Cambridgeshire and other inland counties. Its visits to Ireland are comparatively rare, and irregular.

To the Færoe Islands the Glaucous Gull is a visitor from autumn to spring, but it breeds sparingly in the northern portions of Norway and Russia; and more abundantly in Novaya Zemlya, and along the entire coast of Arctic Siberia to Bering Straits. In winter it occurs not unfrequently on the coasts of northern and temperate Europe, wandering as far south as to the Straits of Gibraltar. That it occasionally enters the Mediterranean is shown by the fact that two examples have been obtained in Liguria; M. Alleon procured it on the Black Sea; and it has also been killed in Bohemia, and other inland places. Returning to its summer habitat, we find this Gull generally distributed in Spitsbergen; it is common and resident in Iceland; and is by far the most numerous of the larger species found in Greenland, whence its range extends, up to 82½° N. lat., throughout the entire Arctic regions of America as far as Bering Sea. On the east side it straggles in winter as far as the Middle States; and, in the North Pacific, to the southern portions of Alaska; whilst, on the Asiatic side, it ranges along the coast of Kamtschatka to the Kuril Islands, and occasionally to Hakodate, Japan, where Captain Blakiston obtained immature specimens. It necessarily abandons the high Arctic regions in September, and its return to the extreme north does not take place until June.

On the North Pacific coasts from America to Kamtschatka, straggling to Japan in winter, is found a distinct species, *Larus glaucescens*, which has the primaries faintly chequered with grey, giving the bird the appearance of a washed-out Herring Gull. A supposed new species from Cumberland Sound, on the east side, has lately been described by the name of *L. kumlieni*.

Scoresby, in his account of the Arctic Regions, says of the Glaucous Gull, "*Larus imperiosus* might perhaps be a more characteristic name for this lordly bird, and would correspond pretty nearly with the name, Burgomaster or Burgermeister, as generally given to it by the Dutch. It may with propriety be called the chief magistrate of the feathered tribe in the Spitsbergen regions, as none of its class dare dispute its authority, when, with unhesitating superiority, it descends on its prey, though in the possession of another. The

Burgomaster is not a numerous species, and yet it is a general attendant on the whale-fishers whenever any spoils are to be obtained. It then hovers over the scene of action, and, having marked out its morsel, descends upon it and carries it off on the wing. On its descent, the most dainty pieces must be relinquished, though in the grasp of the Fulmar Petrel, the Ivory Gull, or the Kittiwake. It seldom alights in the water. When it rests on the ice, it selects a hummock, and fixes itself on the highest pinnacle. It is a rapacious animal, and, when without other food, falls upon the smaller species of birds and eats them. I have found the bones of a small bird in its stomach, and have observed it in pursuit of the little Auk. Its eggs I have found on the beach of Spitsbergen, deposited in the same way as those of the Tern, namely, on the shingle, above high-water mark, where the full power of the sun falls."

The remarks of Faber in reference to this species at Iceland are, in substance, as follows:—This bird remains here all the year, keeping the open sea in winter, and breeding in summer on the rocks of the southern and western parts in company with *Larus marinus,* which it resembles in some of its habits, in its nest, and its eggs. It attacks smaller birds, and robs their nests for food. It feeds also on *Cancer pulex* and *araneus;* extracts the soft animals from the shells of *Venus islandica, Pecten islandicus,* and searches closely for the Lump-sucking fish, *Cyclopterus lumpus.*

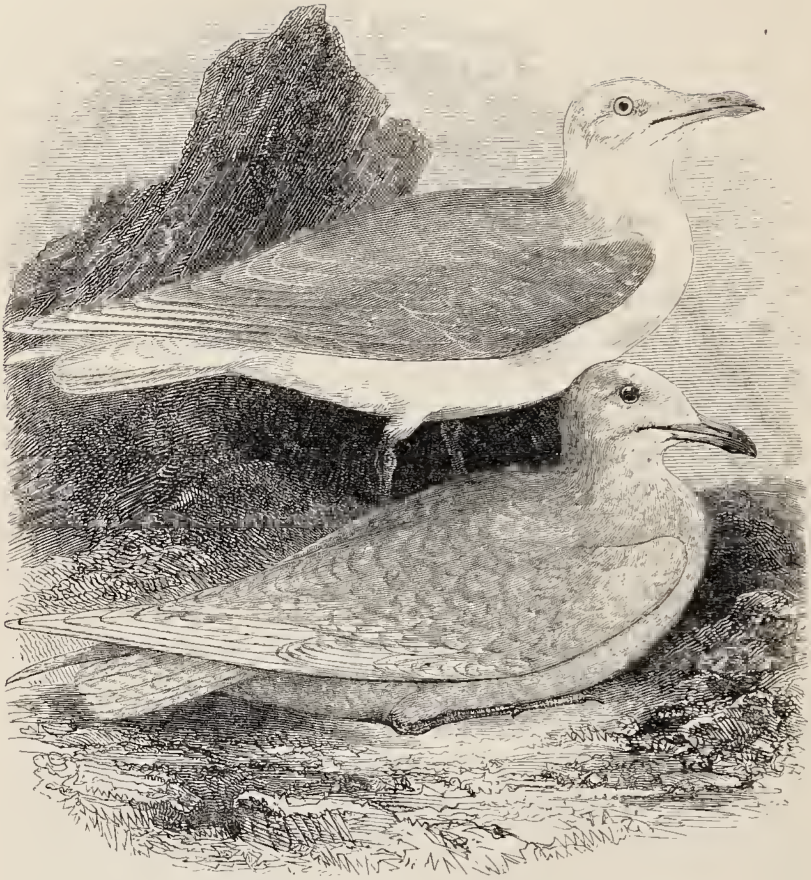
The Glaucous Gull makes its nest indifferently on the projecting ledges of lofty cliffs, or on the sea-shore. On Spitsbergen the Rev. A. E. Eaton found nests among the sitting Eider Ducks, and one was placed upon the upturned roots of a spruce fir among the drift wood. Eggs were taken on the 15th June, and young observed on the 13th July (Zool. s.s. p. 3811). The egg is of a stone-colour, spotted with ash-grey and two shades of brown, and measures 2·9 by 2 in. The Glaucous Gull has bred and successfully reared its young in the Zoological Society's Gardens, on several occasions.

The adult bird has the bill yellow, the inferior angle of the lower mandible orange-red; irides straw-yellow; all the plumage nearly white, but with a tinge of pale-grey over the back and wing-coverts; primaries white, reaching but little, if any, beyond the end of the tail; legs and feet bright pink flesh-colour. Old males have been taken measuring, from the point of the beak to the end of the tail-feathers, thirty-two and even thirty-three inches; the wing, from the carpal joint to the end of the longest quill-feather, nineteen inches. The females are smaller: sometimes considerably so. In winter the head and neck are streaked with ash-grey.

The young has the bill pale brown at the base, the point dark horn-colour; the irides dark blue; head, neck, back, and wing-coverts a mixture of pale ash-brown and dull white; scapulars and tertials transversely barred with pale brown, and tipped with greyish-white; primaries and secondaries uniform pale yellowish-grey; upper and under tail-coverts dull white, barred with pale brown; tail-feathers uniform yellowish-brown; wings only reaching to the end of the tail; chin, throat, and breast dull white, mottled with pale brown, belly more uniform in colour, and greyish-brown; legs and feet livid flesh-colour. The next year the mottlings become paler; and just before the final autumnal moult, when the pearl-grey mantle will be assumed, the colour is of a nearly uniform creamy or even perfect white. Birds in this particular stage, which lasts but a very short time, are very rarely obtained; and on one example procured in North America Richardson bestowed the name of *Larus hutchinsi;* similar ones have since then been taken in Japan and in Norway, and the Editor has seen birds pass through this stage in the Gardens of the Zoological Society.

The downy nestling is of a somewhat greyer tint than the young Herring Gull, and the markings on the back are fewer and fainter.

GAVIÆ. *LARIDÆ.*



Larus leucopterus, Faber.*

THE ICELAND GULL,

OR LESSER WHITE-WINGED GULL.

Larus Icelandicus.

This White-winged Gull bears about the same proportion in size to the Glaucous Gull that the Lesser Black-backed Gull does to the Great Black-backed Gull. It was first recorded as a winter visitor to the British Islands by Dr.

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* Prodromus Isländischen Ornithologie, p. 91 (1822).

Lawrence Edmonston, of Unst, in Shetland; and since its specific distinctness from the Glaucous Gull has been recognized, it has proved to be a tolerably frequent, although a somewhat irregular, visitor to our shores. According to Mr. R. Gray, immature birds occur almost every year on the eastern side of Scotland, from Shetland to Berwick, and on the west from Skye to Ayrshire, although adults are rare. The winter of 1872-3, which saw such an unusual arrival of Glaucous Gulls in the Firth of Forth, was still more remarkable for the occurrence of the Iceland Gull; and the following details are extracted from an interesting paper on the subject by Mr. J. A. Harvie-Brown (Pr. N. H. Soc. Glasgow, 1873, p. 210) :—

"When first observed and commented upon, a few specimens of the rarer species of White-winged Gull (*Larus leucopterus*) had been observed by Dr. Dewar, and afterwards they were seen in some numbers by Mr. Gray and myself on the 4th January. As Mr. Gray mentioned in his paper, we identified at least six adult birds of this species on that day. Since then I have met with them abundantly; on some days they were much more numerous than the Glaucous Gull (*L. glaucus*). But it was only at sunrise on the 13th of this month that I realized in my mind the vast numbers which are frequenting the firth. Whether those I saw on this day had only lately arrived, or had merely remained out of sight, it is difficult of course to determine, but I think, from what I have observed of late, that the latter is the more probable supposition. On the above-mentioned date, I counted in a few seconds no less than twelve adult Iceland Gulls as they flew low against the wind, showing the white primaries distinctly, and as I afterwards slowly drifted in a boat along the side of the mud-banks, Iceland Gulls were constantly in sight—two, three, or even more at a time. These birds were all flying away inland ; and, in company with Glaucous and other Gulls, were alighting on a ploughed field on Dunmore estate. Towards the afternoon scarcely a single Iceland Gull was visible over the water. As a large body of Gulls have for some time past frequented this particular field, I am in the belief that the Iceland Gulls have been generally associating with them, and, in fact, that they are not so exclusively maritime in their habits as has been described. Moreover, it is seldom that I have observed the Iceland Gull following the shoals of Garvies (*Clupea sprattus*), or fishing for them in the manner of the Kittiwake (*Rissa tridactyla*), or even to the same extent as the Glaucous or other large Gulls. They seem rather to hold aloof from the other species when the latter are fishing, and fly often in pairs far inland over the mud-flats. Upon other occasions, on firing a shot in the early morning, when the crowd of Gulls was resting on the edge of the mud, I have observed that they almost invariably wing their way to the above-mentioned field; and, when the tide rises, and the fishermen begin drawing their nets, do not, like the other species, flock down to feed on the fish which escape through the meshes, and which struggle for a time near the surface.

"Upon the 15th of January I again paid an early visit to the coast, and took up a position on the pier. Thousands of great Gulls—*Larus marinus*, *L. fuscus*, *L. glaucus*, and *L. argentatus*—were massed together on the mud-edge, and on examining them carefully with my glass, I could distinguish many of the more slender-built Iceland Gulls amongst them. At length one adult Iceland Gull flew past me, and I fired, but ineffectually. With the rushing noise of many wings, the great body of Gulls rose, at the report of the gun, and, along with other flocks lower down the firth, winged their way, as before, inland, and the air became filled as by a snow-drift.

"Before they all took wing, however, I had a good opportunity of comparing the Glaucous and Iceland Gulls when at rest, and the experiences of this, and of another trip combined, have led me to the following conclusions:—Apart from the inferior size of *L. leucopterus*, which in itself alone cannot be accepted as a criterion for distinction, this species can be separated by the field naturalist from the Glaucous Gull, by its neater, more slender appearance, standing higher on its legs, having a more cuneate shape posteriorly, and the wings more tapering when closed. Further, it appeared to me that the Glaucous Gulls, when resting on the mud, and with the wings closed, carried the tips of the wings higher than the end of the tail, but that the Iceland Gulls carried their wings on the same, or nearly the same level as the tail; thus imparting to these birds a more tidy, trim appearance than their big brothers possessed. Those who have watched the tame Goose of our farm-yards, and have had opportunities of comparing with it the lighter, handsomer form of the tamed Grey-lag Goose (*Anser ferus*), will more easily understand some of the comparisons I have above drawn. When flying, the action of the Iceland Gull is more airy and buoyant —less owl-like—than that of the Glaucous Gull. The adults, when flying low or against a dark cloud, show the white primaries, like a narrow strip of silver, along the wing."

Mr. Harvie-Brown adds that the Iceland Gull is by far the most wary species of Gull frequenting the Firth of Forth, the adults being especially shy. On the coast of England it is naturally a rarer visitant; nevertheless, immature specimens have been obtained along the entire coast as far as Cornwall, although at irregular intervals. A large number visited the neighbourhood of Penzance in January and February 1873; in the winter of 1874-5, after long-continued gales, both young and old were numerous on the coast of South Devon; and Mr. Cecil Smith has recorded the occurrence of an immature example on the 12th of December, 1881, so far inland as Somerton, which is almost in the middle of the county of Somerset. On its migration northwards this species has been observed by Mr. Cordeaux in the Humber district as late as the 18th of April.

In Ireland Mr. R. Warren states that about the estuary of the Moy immature birds are occasionally seen in winter, but not every year; and on one occasion he observed an adult specimen on the 7th of May, 1875 (Zool. 1877, p. 326). On other parts of the coast it would appear to be of rare and irregular occurrence.

The Iceland Gull is a winter visitor to the Færoes, Norway, and the coasts of the North Sea and the Channel as far as the north-west of France. Eastwards its occurrence rests upon a single specimen brought from Novaya Zemlya, identified by Dr. A. Von Pelzeln, and the expression of a belief by Von Middendorff that he saw this species on the Taimyr in 75° N. lat. Westward it occurs in Iceland, where Faber first observed it, and the substance of his remarks may be thus given:—

This is the only Gull that passes the winter in Iceland without breeding there in summer. I have travelled over most of the coast of the island, but have never found its breeding-place. No *L. leucopterus* occur on the rocks of Faxe or Bredebugt towards the west, where *L. glaucus* breeds in large colonies. A few days after the middle of September, the first specimens, both old and young, make their appearance on the coast of Iceland, confining themselves to the northern parts, among the small inlets of which great numbers pass the winter. When I lived on the innermost of the small fiords on the northern coast, these birds were our daily guests. Towards the end of April their numbers decreased, and by the end of May they had nearly all disappeared from Iceland. These tame birds came on land by my winter dwelling on the northern coast, to snap up the entrails thrown away by the inhabitants, and fought fiercely for them with the Raven. I had made one so tame that it came every morning at a certain time to my door to obtain food, and then flew away again. It gave me notice of its arrival by its cry. This Gull indicated to the seal-shooters in the fiord where they should look for the seals, by continually following their track in the sea, and hovering in flocks, and with incessant cries over them; and whilst the seals hunted the sprat and the capeling towards the surface of the water, these Gulls precipitated themselves down upon the fish and snapped them up. In like manner they follow the track of the cod-fish in the sea, to feed upon the booty hunted up by this fish of prey. In the winter of 1820-21, which I passed at Debratte, on the southern coast, there was not a single *L. leucopterus* to be seen; on the 1st of March, 1821, the shore was almost free of sea-gulls ; but as I stepped out of my room early on the 2nd of March, the air was almost filled with a species of *Larus* which had appeared suddenly. As I approached and looked up at them, I soon recognized my *L. leucopterus*, which had arrived in great numbers during the night. The Icelanders concluded, from the sudden appearance of these Gulls, that shoals of codfish must have arrived on the coast. They got ready their boats and nets, and the fish had in truth arrived in such numbers that the fishing for that season commenced immediately. Here, where hitherto an ornithological quiet had reigned, everything now became enlivened through the arrival of these birds, which, without intermission, and with incessant cries, hovered over the nets. If I wished to shoot this Gull I observed the time when the fishing-boats landed, and this tame bird followed the boats to shore in order to feed on the parts which were thrown away by the fishermen. I heard afterwards that this particular species of Gull had been very scarce during that winter on the northern coast ; the Greenland ice had filled up all the inlets there, and the birds were thus driven to the southern shore, where I had again the opportunity of observing them. In this year, 1821, they remained on the southern coast till the middle of May, when they entirely left it to proceed northward to their breeding-places. This Gull was my weather guide in winter. If it swam near the shore, and there, as if anxious, moved along with its feathers puffed out, then I knew that on the following day storms and snow were to be expected. In fine weather it soared high in the air. Hundreds often sit on a piece of ice, and in that way are drifted many miles. In its manners it differs from the Glaucous Gull, which has the habits of the Great Black-backed Gull, and moves with more energy. The nature of the White-winged Gull more resembles that of the Herring Gull ; its deportment and flight are more graceful ; it hovers over its prey, is somewhat greedy, always active, and is not afraid to fight with equal, or superior antagonists for its food.

In Greenland this Gull breeds in both Inspectorates, especially in the southern one; and thence it ranges throughout the greater portion of the Arctic regions of America. During Sir James C. Ross's and Sir Edward Parry's first voyages, many specimens of this Gull were obtained in Davis's Straits, Baffin's Bay, and at Melville Island; the naturalists of the Arctic Expedition of 1875-6 did not, however, observe it in Smith's Sound. It is abundant on all the shores of Bering Sea; on the Aleutian Islands and the Alaskan coast; and in the vicinity of Herald Island on the Siberian side. Southward its range extends to California; and on the Asiatic side to Japan, an example having been procured at Yezo by Capt. Blakiston.

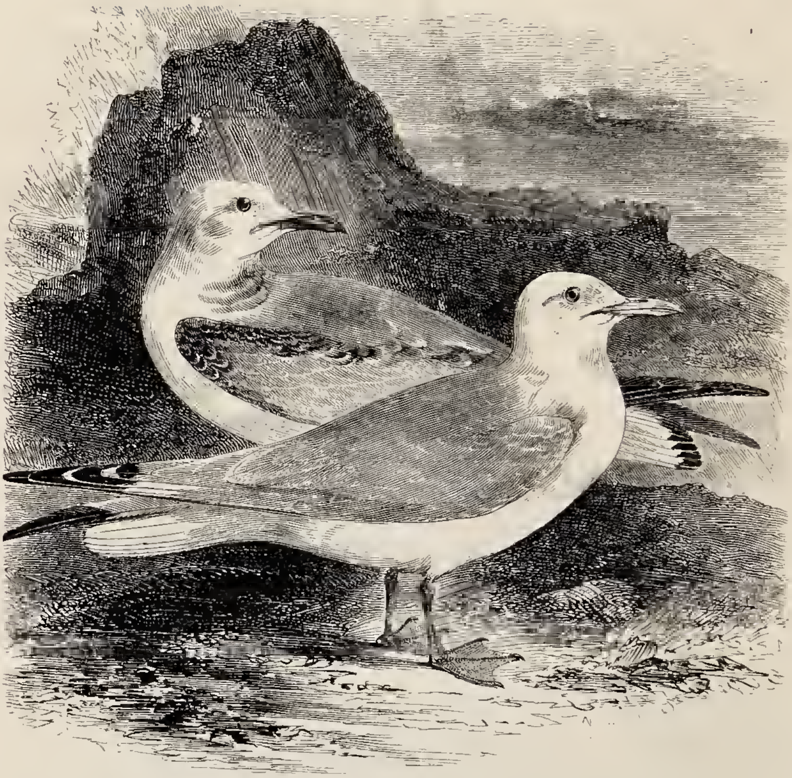
The eggs of this species are laid early in June, in a small depression on the bare ground, or on the ledges of precipices; their colour is of a greenish-stone blotched with brown, and the average measurements are 2·75 by 1·8 in.

In the adult Iceland Gull the bill is small and yellow, the angle of the under mandible red; the irides straw-yellow; head and neck all round pure white; back, wings, and all the wing-coverts very pale grey; secondaries tipped with white, forming a visible light band; primary quill-feathers white, washed with pearl-grey on the upper portion; upper tail-coverts and tail-feathers white; chin, throat, breast, and all the under surface of the body and tail, pure white; legs, flesh-coloured. From September to the beginning of April, the head and neck are spotted and streaked with grey.

The whole length is twenty-two inches; the pointed ends of the wings, when closed, reach two inches beyond the tail, and are sometimes seventeen inches in length: as much as in some examples of the Glaucous Gull; but in other respects the usual dimensions of the latter species are far superior.

The young bird has the bill pale yellow at the base, the anterior half horny-black; the irides dark brown, head and neck dull white, clouded with pale ash-brown; the back the same colour; secondaries, tertials, and all the wing-coverts dull white, marked transversely with pale brown angular streaks; primaries white; tail-coverts and tail-feathers greyish-white, the latter marked across with broadish lines of pale brown, which are more numerous about the base than towards the end; chin dull white; neck, breast, belly, and all the under surface of the body, dull white, streaked transversely with pale brown; legs yellowish-brown.

The markings on the feathers are gradually lost in the successive moults, the same phases being passed through as those already noticed in the Glaucous Gull; and by the fourth summer the adult plumage has been assumed.



RISSA TRIDACTYLA (Linnæus*).

THE KITTIWAKE GULL.

Larus tridactylus.

RISSA, *Stephens*†.—Bill rather short and stout, the upper mandible considerably decurved to the tip, the lower mandible compressed, with the intercrural space long and narrow; nostrils median, linear, oblong. Wings long, pointed, the first primary slightly exceeding the second. Tail slightly but perceptibly forked in the young: nearly square in the adult; tarsus very short in proportion to the foot; hind toe very small and usually obsolete; claws rather small, slightly curved.

THE KITTIWAKE is a Gull which is generally distributed on the shores of the British Islands, and remains with us in larger or smaller numbers throughout the year. Of all our species it is the most decidedly a rock-breeder, and it congregates in localities suitable to its habits—sometimes in amazing numbers — during the nesting-season. It no longer breeds on the Needle Rocks of the Isle of Wight, and it is doubtful if it does so in Dorsetshire; but there are some stations in Cornwall, and the Scilly Isles; and multitudes make their nests on the precipitous crags of Lundy Island off North Devon. Colonies are also to be found along the coast of Wales, and on the Isle of Man. On the eastern side of England it breeds abundantly on the Flamborough range of cliffs in Yorkshire, and the Pinnacles at the Farne Islands off Northumberland. Passing northwards, it appears to nest in the vicinity of St. Abb's Head, where it has been mistaken for the Common Gull (*L. canus*); and there are colonies on the Bass Rock; at Dunbuy in Aberdeenshire; and in other places along the coast, up to the Orkneys and the Shetlands. In the latter, thousands may be seen occupying the precipitous Noup of Noss. On the west coast Mr. R. Gray states "that there are many breeding-stations, ranging from the Scaur Rocks in the Bay of Luce, to the island of Handa off the coast of Sutherlandshire, on the one hand, and from Barra Head to Suleskeir and Rona, on the other. It is abundant during the summer months on Ailsa Craig, and the Mull of Oe in Islay, the island of Rum, where there is an extensive breeding colony, the Shiant Isles, Haskeir Rocks, and St. Kilda." In Ireland, this is by far the most common species of Gull at Rathlin Island, as well as on the cliffs of Horn Head in Donegal, and on the lofty coast and islands of the west and south; there are also nesting-places, although in smaller numbers, on the eastern side.

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* *Larus tridactylus*, Linnæus, Syst. Nat. Ed. 12, i. p. 224 (1766).

† Stephens, ex Leach, in Shaw's Gen. Zool. xiii. pt. i. p. 180 (1825).

In the Færoes the Kittiwake breeds in myriads, and the same may be said of some portions of Finmark, in Norway; it also nests on Spitsbergen, beyond which Parry observed it in $82\frac{3}{4}^\circ$ N., the highest latitude attained by him; and on Novaya Zemlya. Along the coasts of Sweden and Denmark it is principally observed on migration, and although it is said to breed on the island of Bornholm in the western Baltic, it is of rare occurrence in the north and east of that inland sea. It visits the coast of the Netherlands and of France, breeding in Brittany; and it ranges southwards in winter to Spain, North Africa, the Canaries, and the Azores. In small numbers it occurs in the southern part of the Mediterranean as far as Malta; and not only is it to be found occasionally on the inland waters of the Continent after heavy weather, but it annually ascends the Garonne as far as Toulouse, whence it probably crosses over to the north-western portion of the Mediterranean, where it is not uncommon. Either by following the river-system of Russia, or by some other route, it arrives on the Black Sea and the Caspian in winter; and Th. von Heuglin records it as a straggler to the coast of Egypt.

Returning northwards, we find the Kittiwake common in summer on the coasts of Iceland, Greenland, and the Arctic Sea, from Baffin Bay to the Pacific, and to the Preobraschine Islands on the North Siberian shore. Southwards its range extends to Japan. Among the myriads which frequent the islands and shores of Bering Sea, some examples have minute but tolerably developed hind toes, with, at times, a visible nail; but this variation is not always equal in extent, even on both feet of the same individual, and there is a gradation between this variety, which Bonaparte distinguished by the name of *Rissa kotzebui*, and the ordinary Kittiwake. Nor is this development confined to the birds of the North Pacific, although more frequently observed there than elsewhere, for it is well marked in an example in the British Museum, obtained by Ross at Port Leopold, Whalefish Islands; also the only specimen which Mr. A. H. Cocks brought back from Spitsbergen has distinct hind toes (Zool. 1882, p. 410), and similar instances might be multiplied. There is, however, a perfectly distinct species, *Rissa brevirostris*, Brandt, which is abundant between Alaska, Kamtschatka, and the Sea of Okhotsk, breeding in thousands on the Prybilov and Aleutian Islands; and the latter may at once be recognized by its very stout bill, *orange-red legs and feet*, and darker mantle; the ground-colour of the primaries is also dark grey. A variation in the hind toe and nail, similar to that in *R. tridactyla*, although in a smaller degree, is observable in this species. In winter our Kittiwake goes as far south as the Middle United States, and the Bermudas.

The Kittiwake breeds on the narrowest ledges of rocky cliffs, and the nests, which are formed of sea-weeds, are generally placed very close together. Three eggs is the most usual number in each nest: these average 2·15 by 1·6 in.; of a stone-colour, tinged with olive, thickly spotted with ash-grey, and two shades of light brown. They are seldom laid until the last week in May, and sometimes not till the first week in June, so that many of the young are still in the nest, or barely fliers, when the Sea Birds Protection Act expires on the 1st of August. Some years ago, when the plumes of birds were much worn in ladies' hats—a fashion which any season may see revived—the barred wing of the young Kittiwake was in great demand for this purpose, and vast numbers were slaughtered at their breeding-haunts. At Clovelly, opposite Lundy Island, there was a regular staff for preparing the plumes, and fishing smacks with extra boats and crews used to commence their work of destruction at Lundy Island by daybreak on the 1st of August, continuing this proceeding for upwards of a fortnight. In many cases the wings were torn off the wounded birds before they were dead, the mangled victims being tossed back into the water; and the Editor has seen hundreds of young birds dead, or dying of starvation in the nests, through want of their parents' care, for in the heat of the fusillade no distinction was made between old and young. On one day 700 birds were sent back to Clovelly, on another 500, and so on; and, allowing for the starved nestlings, it is well within the mark to say that at least 9,000 of these inoffensive birds were destroyed during the fortnight.

The principal food of the Kittiwake is the small surface-swimming fry of fishes, and other soft marine animals. Dr. Malmgren found that the stomachs of those which he shot off Spitsbergen were filled with *Limacina arctica*. By the middle of August the birds which have bred in the far north have left the cliffs, and have begun to migrate southwards in large flocks; but, from the Shetlands downwards, comparatively small numbers are to be found in ordinary winters along the shores which are influenced by the Gulf Stream.

In olden times this Gull was considered good food, and Sir Robert Sibbald says that "The Kittiweak is as good meat as a partridge," an opinion endorsed in later times by those inhabitants of Scotland who relish Gannets. There is an old story told by Pennant of a gentleman who, as a whet for his appetite before dinner, ate *six*, and did not find himself a bit more hungry than when he began. Sir James C. Ross says, "We killed enough to supply our party with several excellent meals, and found them delicious food, perfectly free from any unpleasant flavour."

The young bird, while bearing on its plumage the dark-coloured markings, has been called the Tarrock; the adult bird is the Kittiwake, and the name has reference to the cry of this Gull, which, when disturbed at its breeding-station, utters three notes in quick succession, which closely resemble in sound the word in question. In Devonshire this species is known as the 'Hacklet' or 'Hacket' Gull; in other parts it is known as the 'Annet'; and in Shetland as the 'Waeg.' Mr. Cordeaux says that the Flamborough fishermen call the young Kittiwakes 'Mackerel-birds,' because they usually appear at sea with their parents in August when the fish are approaching the coast.

The adult bird in summer has the bill greenish-yellow, inside of the mouth orange; the irides dusky-brown; the head and the neck, all round, pure white; back and wings pale slate-grey, the secondaries and tertials tipped or edged with white; the outer margin and tip of the first primary quill-feather black, the next three tipped with black, the fifth with a black bar near the end, but the extremity white; the rest grey; tail-coverts and tail-feathers, chin, throat, breast, and all the under surface of the body and tail pure white; legs short, and with the toes and interdigital membranes dusky in colour, the hind toe generally only a small tubercle without any projecting horny nail or claw, for which reason the species was called *tridactylus*—three-toed. The whole length is fifteen inches and a half; from the anterior joint of the wing to the end of the longest quill-feather twelve inches.

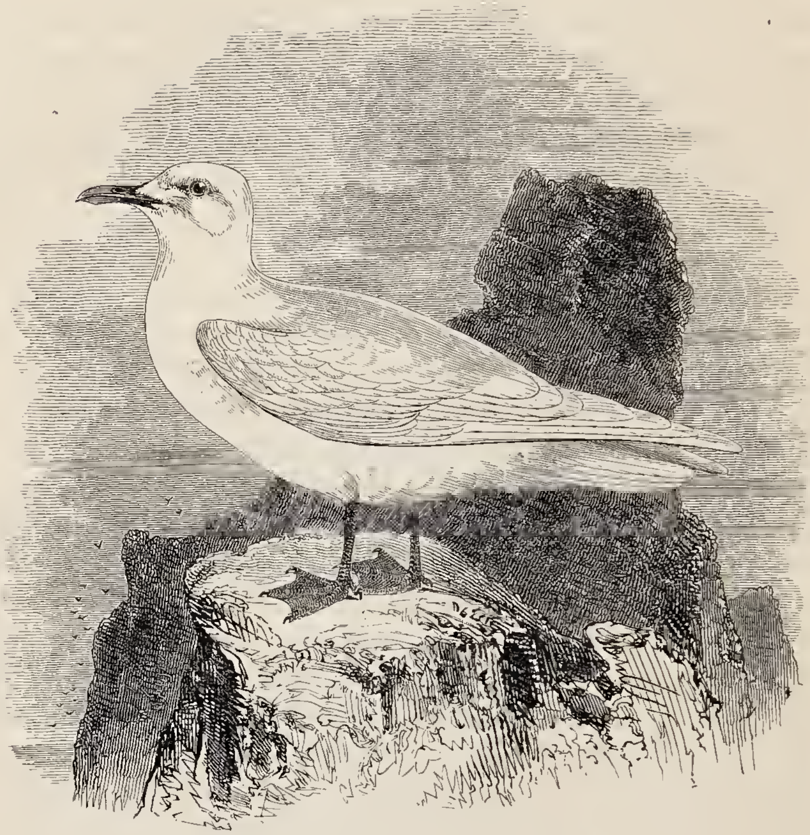
The adult bird in winter has the hind neck pale slate-grey, like the back; the occiput, top of the head, and the region of the ear-coverts streaked with dusky-grey, the other parts as in summer.

In birds of the previous year there is a dark line down the outer web of the second primary as well as the first, and indications of the same colour on the outer web of the third primary; the outer primary-coverts have also dark streaks.

The young of the year have the bill black; the irides dusky, almost black; upper part of the head white; the occiput and nape with a few dusky-grey patches on a white ground; the lower part of the neck behind marked by numerous blackish-grey feathers; back, scapulars, great wing-coverts, and secondaries, pale slate-grey slightly tipped with brownish-white, which gradually wears off; points of the smaller wing-coverts black, forming a dark bar; the four outer primaries on each side black on the outer webs, and also in decreasing proportions on the inner webs next the shafts; tertials pale slate-grey, with a spot of black near the end, the inner broad web margined with white; upper and under tail-coverts white; tail-feathers white, barred with black at the end, except the outer tail-feathers on each side, which are the smallest; chin, neck, breast, and all the under surface of the body pure white; legs, toes, and membranes, pale brown.

The downy nestling is white on the head and underparts, with a buff tint on the shoulders and flanks; back greyish; bill nearly black; feet dusky with yellowish webs.

Varieties of the Kittiwake are very rare; the Editor is indebted to Mr. E. Hargitt for a perfect albino obtained in Iceland on the 29th September, 1877.



Pagophila eburnea (Phipps*).

THE IVORY GULL.

Larus eburneus.

Pagophila, *Kaup*†.—Bill shorter than the head, robust, compressed, straight, the upper mandible decurved towards the tip, lower mandible narrower; nostrils basal, linear, oblong, wider in front, covered above and behind with a sloping thin-edged plate. Wings long, pointed, the first quill longest. Tail rather long, slightly graduated. Legs short, bare for a short distance above the tibia; tarsi broadly scutellate in front, and minutely at the sides and back; interdigital membranes emarginated and serrated; claws strong and curved; hind toe furnished with a large claw, and connected on the inside with the tarsus by a well-defined web.

* *Larus eburneus*, Phipps, Voy. towards North Pole, p. 187 (1774).

† Natürl. Syst. pp. 69, 186 (1829); from πάγος, a pointed rock, and φιλέω, I love.

THE first example of this truly Arctic Gull recorded in the British Islands was obtained at Balta Sound, Shetland, in the winter of 1822, by the late Dr. Lawrence Edmonston (Mem. Wern. N. H. Soc. iv. p. 501), who presented the specimen to the Edinburgh Museum. Other examples have subsequently been observed there, and the Rev. S. H. Saxby, in a note to his brother's 'Birds of Shetland' (p. 333), says, that although a rarity, it is a tolerably regular visitor to those northern islands. In Orkney it has occurred at least four times: once in May; the late Sir William Jardine possessed an example with unusually short legs, and comparatively long wings, shot in Caithness in November, 1854; two appear to have been obtained in Banffshire (Zool. pp. 6974, 7387); and Mr. J. Whitaker has an immature example obtained near Aberdeen in September, 1874. On the west side, in addition to a specimen in immature plumage recorded by Selby from the Firth of Clyde, Mr. R. Gray mentions six individuals—several of them adults—obtained or observed on the coast and neighbouring islands. Mr. J. Hancock records one adult from the mouth of the Tyne, and an immature bird, now in the Sunderland Museum, shot at Seaton Carew. Besides one shot, 'many years ago,' off Scarborough, examples have been obtained on the Yorkshire coast in the autumns of 1875, 1879, and 1880, two of them being adult males, and one in immature plumage. It has not as yet visited Norfolk, the bird recorded under this name (Zool. p. 1384) being, as Mr. Stevenson informs the Editor, a specimen of some larger species. On the southern coast three examples are mentioned by Mr. A. E. Knox from Sussex; one has been procured at Torquay; Rodd records two from Cornwall; and two or three have been taken in Somersetshire.

In Ireland, according to Thompson, the Ivory Gull has been obtained on two occasions: one near Tralee in immature plumage, and an adult picked up on Achil Island; and other examples have been observed. It is probable that several other specimens, which are not now recorded, have occurred in the British Islands; but enough has been said to show the general line of this bird's migration in winter, and to call attention to a fact which is very unusual with Gulls: namely, that the adults which have visited our shores equal, or even exceed in number the immature birds.

In the Færoes about six occurrences are on record; and on the coast of Norway, according to Mr. Collett, immature birds occur every winter down to Tromsoë, 69° 38′ N. lat., where they are known by the name of 'Hav-rype' or Sea-Ptarmigan, individuals in full plumage being rarely observed; but south of the Arctic circle only stragglers are met with. It is worthy of remark, in connexion with this southern migration, that, in his last trip to Spitsbergen, in September, 1882, Mr. A. H. Cocks did not meet with a single bird of this species. It rarely enters the Baltic, but is a straggler to the coast of Denmark and Northern Germany; and Temminck mentions (Manuel d'Orn. p. 498) having himself killed a bird of this species, which was entirely white, in spring, on the coast of Holland. It is a rare visitor to the coast of France, and an adult was killed at Le Crotoy, Somme, on the 13th September, 1869. A specimen which was killed in winter, some years since, near Lausanne, in Switzerland, has been recorded by Necker, and also by Schinz.

For particulars respecting the habits of the Ivory Gull, we must consult the narratives of the explorers of high northern latitudes. It has been observed by every visitor to Spitsbergen, interesting details, embodying Dr. Malmgren's account of his discovery of its eggs, being given by Professor Newton (Ibis, 1865, p. 507); and, more recently, by the Rev. A. E. Eaton (Zool. s.s. p. 3810). The latter says that the 'Snow-birds,' as the sailors call the Ivory Gulls, were very abundant, and many were shot: sometimes when swimming and fishing for crustacea or *Clione borealis*. They never lie down like the Arctic Terns, but either walk or stand still; some of them walking far into the interior of the carcases of the white whales, and emerging with their heads covered with blood. At Wiede Bay and Cape Oetker some of the nests seemed accessible, but neither young nor eggs were then obtained. Dr. Malmgren had been more fortunate in

Murchison Bay, lat. 80° N., long. 18° 30′ E., where he found a number of birds established on the lower niches and clefts of a limestone precipice at a height of from 50 to 100 feet. It was not until the 30th July that two nests were reached and proved to be shallow depressions lined with dry plants, grass, moss, and a few feathers. Each contained one much incubated egg, which, with the females, are in the Stockholm Museum. Another egg, from Hinlopen Strait, is in the collection of Mr. Benzon of Copenhagen.

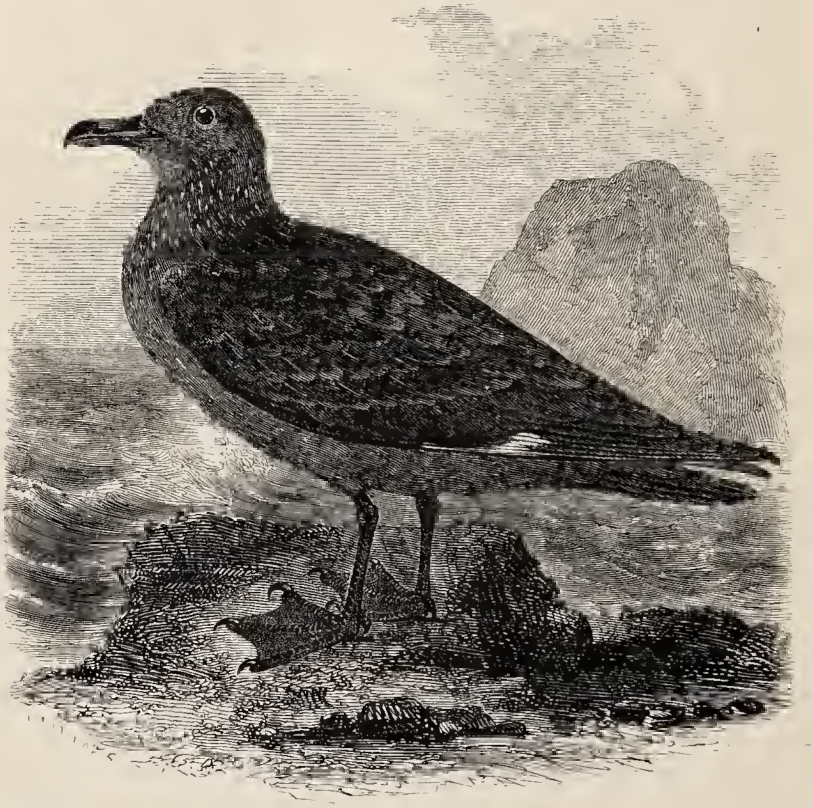
North of Spitsbergen, Parry observed the Ivory Gull as far as he went on his boat voyage; and Mr. Leigh Smith obtained several young birds on his cruise, in 1880, to the shores of Franz-Josef Land; he also observed many breeding-places on his second voyage in 1881, when his yacht 'Eira' had to be abandoned. In Novaya Zemlya the Ivory Gull has proved to be abundant up to 78° N. lat.; and Baron Nordenskiöld observed it at various points along the shores of Siberia. When frozen up at Pitlekaj, an immature specimen was obtained as late in the year as the 21st of November, having been offered by the Chukches as a Ptarmigan; and when Nordenskiöld eagerly purchased the bird, a smile of satisfaction at the success of his trick passed over the countenance of the seller. In the summer this bird became quite frequent; it was also observed by the naturalist of the 'Jeannette' in the vicinity of Bennett Island, on the 29th of July, 1881; also in June and July, 1880, during the drift of the ill-fated vessel, and on the 4th September, 1879, off Herald Island. We have now traced the range of this species to the Asiatic side of Bering Sea, but there is as yet no record of its occurrence down the Pacific coast of North America; although, continuing eastward along the shores of the Arctic Ocean, we find a record by Richardson of a pair found breeding in about 122° W. long. To the north and east of this point the Ivory Gull has been observed on almost all the Arctic expeditions; and Sir Leopold M'Clintock obtained a single egg from a nest on Prince Patrick's Island, in 77° 25′ N. lat., long. 116° W. The parent bird was thoroughly identified, and the egg, which is of a pale olive-colour blotched with brown, is now in the Museum of Science and Art in Dublin. It is figured with full details by Dr. Carte in the Journal of the Royal Dublin Society (vol. i. p. 57, pl. 1), and measures 2·5 by 1·7 in. Major Feilden observed the Ivory Gull frequently in Smith Sound up to lat. 82° 20′ N., and found a pair nesting in a lofty and inaccessible cliff near Cape Hayes, on the 16th of August, 1875. In Baffin Bay it is plentiful; and both adult and immature birds are annually obtained in Greenland. In winter it straggles down the Atlantic seaboard as far as Labrador, Newfoundland, and New Brunswick.

The natural food of this species has already been described by Mr. Eaton; and in addition to the refuse provided by sealers and whalers, it has been observed to devour the droppings of walruses and seals. Malmgren says that he has often seen numbers of Ivory Gulls sitting for hours round the holes in the ice through which the seals come up, and looking as if sitting in council round a table: a practice which has doubtless given rise to the curious name used by Martens in 1675 for this Gull, viz., 'Rathsherr' (councillor), a name analogous in its derivation to that of 'Bürgermeister' (mayor), used for the Glaucous Gull. Major Feilden says that its note is shrill, and not unlike that of the Arctic Tern, and its flight is more like that of a Tern than of an ordinary Gull.

The adult bird in summer has the bill greenish-grey at the base and about the nostrils, the anterior portion yellow; the irides dark hair-brown, eyelids brick-red at the edge; the whole of the plumage, including the wing and the tail-feathers, a pure and delicate white, slightly rosy in life; the legs black. The whole length is from sixteen to eighteen inches, depending on age and sex; from the same cause the wing, from the anterior joint to the end of the longest quill-feather, varies from twelve and a half to thirteen inches. Some small, long-winged and short-legged examples, were distinguished by Holböll by the name of *Larus brachytarsus*; but these differences do not seem to be constant.

Sabine describes a specimen killed during the first week in June, at Greenland, apparently a bird of the preceding year, as having a few light brown feathers about the bill, extending towards the eyes; a very small transverse band of brown spots across the primary wing-coverts, thickest at the point of the wing; the primary quill and the tail-feathers slightly tipped with brown. A bird still younger than the last had the ends of the primary quill-feathers, and of the tail-feathers, tipped with brown.

The nearly fledged young are described by Richardson (Journal of a Boat-voyage, p. 281) as having ash-grey backs; but with regard to the subsequent stages of plumage there is an absence of satisfactory details, and the Editor can only place the following facts before his readers. In the autumn of 1880, Mr. Leigh Smith brought back from Franz-Josef Land a bird which was supposed to be the survivor of several young taken from the nest, and which was presented to the Zoological Gardens. Its prevailing tone was grey, owing perhaps to the saturation of the plumage with grease and dirt acquired on board the steam-yacht, where the bird is said to have frequented the stoke-hole; but after constant washing since its arrival at the Gardens, the bird still remained of a smoke-grey, nearly as dark as a Fulmar Petrel on the upper parts, and especially so on the tail-coverts, the feathers of the back and wing-coverts having slightly darker shafts, and the head bearing not merely a mask, but a short hood of a darker grey than the neck and the under parts. The tail was reduced by abrasion to a mere stump. Such was the description given by the Editor when the bird was supposed to be from three to four months old (Zool. 1880, p. 484), and its correctness can be corroborated by other observers. It was naturally expected that at the next moult the bird would pass into the well-known spotted plumage; but no spots made their appearance, and this example at once assumed the pure white plumage which it now (April, 1884) displays. This omission of the spotted stage may perhaps be owing to captivity in a comparatively warm climate: the Editor is unable to account for it.



STERCORARIUS CATARRHACTES (Linnæus[*]).

THE GREAT SKUA.

Lestris cataractes.

STERCORARIUS, *Brisson*[†].—Bill strong, hard, cylindrical, formed for cutting; compressed, curved, and hooked at the point; base of the upper mandible covered with a cere. Nostrils situated towards the point of the beak, diagonal, narrow, closed behind, pervious. Legs strong, naked above the tarsi, which are rather long; three toes in front, palmated; the hind toe small; claws large, strong, very much curved. Tail slightly rounded, the two middle feathers elongated, sometimes considerably. Wings moderate, the first quill-feather the longest.

THE various species of the genus *Stercorarius* have long been separated by naturalists from the true Gulls, from a just appreciation of the differences, both in their external characters, and also in their habits. The Skuas may be considered as forming a conspicuous portion of the predaceous division among the swimming birds, as indicated by their powerful and hooked beak and claws. Their food is fish, but they devour also the smaller water birds and their eggs, the flesh of whales, as well as other carrion, and are observed to tear their pray to pieces, while holding it under their crooked talons. They rarely take the trouble to fish for themselves, but, watching the smaller Gulls and Terns while thus employed, they no sooner observe one to have been successful than they immediately give chase, pursuing it with fury; and having obliged it from fright to disgorge the recently-swallowed fish, they descend to catch it, being frequently so rapid and certain in their movements and aim as to seize their prize before it reaches the water. On this account these birds have been called Parasitic Gulls, because they are supported by the labours of others. With the exception of two species closely allied to the Great Skua, the members of this genus have their breeding-places in the higher latitudes of the northern hemisphere.

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[*] *Larus Catarractes*, Linnæus, Syst. Nat. Ed. 12, i. p. 226 (1766).

[†] Ornithologie, vi. p. 150 (1760).

As regards the British Islands, the only breeding-places of the Great Skua are in the Shetland group. One of these is in Unst, where the bird is carefully protected by Mr. Edmonston; and another is on the outlying island of Foula, the property of the Scotts of Melby, who do all in their power to maintain the scanty race. In spite of every precaution, a few eggs are stolen every year by the islanders for sale to tourists at Lerwick, and any deficiency in the number of genuine specimens is made up by the substitution of carefully-selected eggs of other Gulls. This fine bird formerly bred on Rona's (properly Roeness) Hill, in Mainland, the highest ground in Shetland, where it was said by the late Mr. Hewitson to have been exterminated by the late Robert Dunn of Hull; but from evidence obtained on the spot, the Editor has reason to believe that, to some extent, Dunn was made the scapegoat for the sins of others. In the

Orkneys it has never been known to breed. From the north this species comes down the line of our eastern shore in autumn, and specimens have been obtained from time to time on that side of Scotland, but on the west coast its occurrence is decidedly uncommon. In England it has been observed off the coasts of Northumberland, Durham, Yorkshire, Lincolnshire, Norfolk, Essex, Kent, Sussex, Dorset, Somerset, Devon, and Cornwall; and occasionally, after severe weather, in some of the inland counties. It is more rarely obtained on its migration northwards in March and April. On the west coast it occurs sporadically. Although never numerically abundant, it appears to be rarer than it really is, its conditions of existence leading it to frequent the fishing-grounds far out at sea where the Gulls which it robs are found in great numbers during the autumn and winter; and it is well known to the Yorkshire fishermen as the 'Morrel Hen.' The coast of Ireland appears to be seldom visited by it.

The Great Skua still breeds in the Færoe Islands; but owing to the fact of its being considered a rapacious bird, and as such subject to the "Neb-toll," its numbers are rapidly diminishing, as shown by Major H. W. Feilden in an excellent account of the 'Birds of the Færoes' (Zool. s.s., p. 3290). On the coast of Norway it is very rare, and Mr. R. Collett informs the Editor that there is no recent confirmation of the statement that it breeds on the Lofoten Islands. Southwards it visits the coasts of the North Sea, without entering the Baltic; and its winter range can be traced to the north-west of Morocco; but it has never been proved to go any distance up the Mediterranean, the record of its occurrence in Malta being due to an erroneous identification. Inland it is said to have straggled to the lakes of Switzerland, and to Southern Germany.

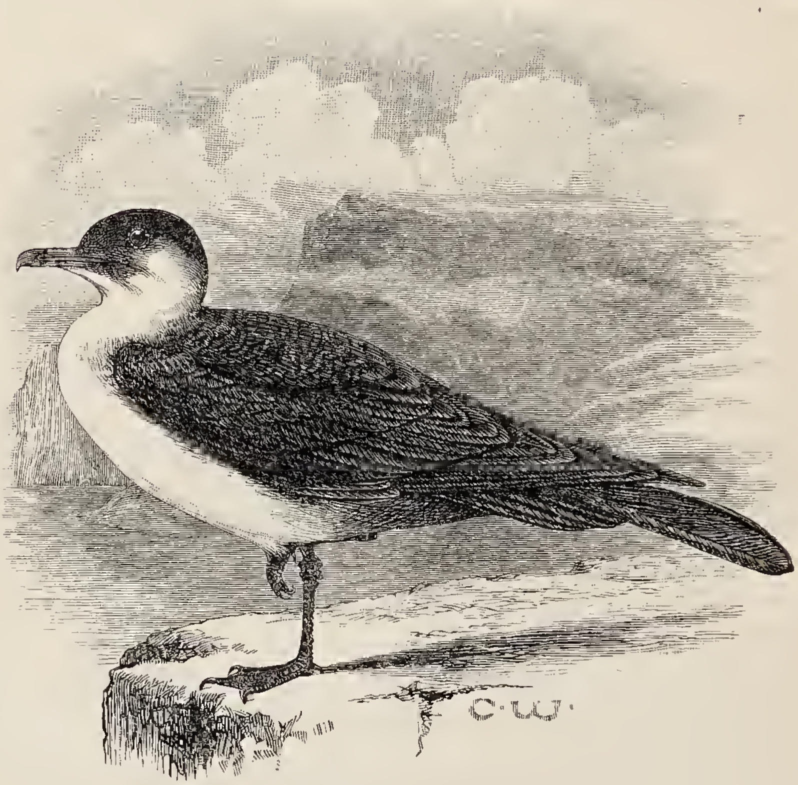
In Iceland it is still tolerably abundant, and four of its principal breeding-places are enumerated by Faber. In South Greenland it was only twice observed by Holböll; but its range appears to extend throughout the Hudson's Bay Territory to Great Slave Lake, and the mouth of the Mackenzie River, where Mr. Bernard Ross says that he found it. On the east side of North America it was observed in some numbers off the Grand Banks and in Ipswich Bay, in the autumn of 1879 (Bull. Nutt. Orn. Club, 1879, p. 128); but on the west coast it is only known to have occurred once—off Monterey, California—probably owing to insufficient exploration. The fact of its being found there at all is interesting, because in South America, from Callao, in 12° S. lat., down to the Straits of Magellan, and through them, along the east coast as far as Rio de Janeiro, it is represented by its close ally *Stercorarius chilensis*, which has a slightly weaker bill, and bright chestnut underparts and axillaries. So far as is known, the latter species does not visit the Falkland Islands, being replaced there by *S. antarcticus*, which is found on the islands of the Southern Ocean as far as New Zealand, visiting the Cape of Good Hope, and the Indian Ocean up to about 10° S. lat. in winter. On comparison with its northern congener, the Antarctic Skua may be distinguished by its stout deep bill, with its well-marked angle at the gonys, larger and coarser feet, and by its nearly uniform sooty-brown plumage, the axillary plumes being invariably smoke-coloured. Some of the examples from the islands between New Zealand and the Cape of Good Hope attain great size, measuring upwards of seventeen inches from the carpal joint to the tip of the primaries; and although subject to some variations (*cf.* P. Z. S. 1876, p. 322), this species can always be separated, even from the melanic varieties occasionally found in our northern Skua.

The Great Skua arrives in the Shetlands about the end of April, and its nest, which consists of a neatly-rounded cavity in the moss and heather of the highest moorlands, is prepared in the latter half of May. According to Major Feilden, the birds appear to prepare several nests before they decide on using one. Two eggs are the full complement, and sometimes there is only one; their colour is an olive-brown with darker markings, and the average measurements are 2·8 by 2 in. There is no difficulty in finding the nests, as the parent birds at once attack any intruder upon their domain with fierce and repeated swoops. When handling the nestling, the Editor found their assaults were unremitting: first one bird and then the other wheeling short, and coming down at full speed, almost skimming the ground. At about fifteen yards' distance, the strong clawed feet are lowered and held stiffly out, producing for the moment a very ungainly appearance, and it seems as if the bird would strike the observer full in the centre of the body, but on quickly raising the hand or stick, the bird rises also, the whirr and vibration of its pinions being distinctly heard and felt. Its ordinary flight is soaring and stately. On leaving the territory of one pair, the attack is taken up by another, and so on; for the Great Skuas do not nest in close proximity. In fearlessness this fine bird is unrivalled; it has been seen to beat off the Sea Eagle, and no Raven stands a chance against it. For this reason the proprietors of the land protect it; Major Feilden says that in the Færoes they also do so on account of the estimation in which the young are held for food; but the fishermen shoot the old birds for the sake of the bill (for the neb-toll), feathers, and flesh, the latter making excellent fishing bait. The stomachs of a pair which were shot, were full of the flesh of the Kittiwake, and the castings consisted of the bones and feathers of that small Gull. Heysham has noticed an adult female on the coast of Cumberland, which allowed herself to be seized while she was in the act of killing a Herring Gull. It also feeds on fish offal, and the Editor found by the side of a nestling some disgorged but otherwise uninjured herrings of large size.

In the adult of this species the bill and its cere are black; irides dark brown; the whole of the head and neck dark umber-brown, slightly varied by streaks of reddish-brown; back, wings, and tail-coverts dark brown, streaked with pale reddish-brown; wing-primaries blackish-brown, white at the base, forming a conspicuous band; tail-feathers dark brown, the two middle ones a little longer than the others; chin, throat, neck in front, breast, and under surface of the body, uniform clove-brown; under wing-coverts and axillaries dark brown; legs, toes, and their membranes, black; the tarsi scutellated in front, reticulated behind; the inner claw the strongest and the most curved. In many examples the acuminate feathers of the nape, and the centres of those of the back, are streaked and margined with greyish-white. The whole length is twenty-four to twenty-five inches; the wing from the anterior bend sixteen inches.

The female is quite as large as the male, and the sexes do not differ in appearance; nor does this species assume with age the lighter colour of the underparts observed in some other members of this genus. Mr. G. T. Fox says of one example which had been kept alive ten years, that the plumage had undergone no change of colour at any of the annual moultings. A specimen brought to Dr. Neill in the summer of 1820, when a nestling, was alive at the Cannon-Mills in October, 1843, being then in its twenty-fourth year, but Dr. Neill sent the Author word at that time, that he feared his old Skua would not survive the winter. The plumage had become very pale, and the head especially greyish-white. Melanic varieties are occasionally met with, but they are uncommon.

The nestling is covered with a buffish-grey down, ruddier on the upper parts.



STERCORARIUS POMATORHINUS (Temminck*).

THE POMATORHINE SKUA.

Lestris pomarinus.

THE first notice of this species as a British bird appears to be in the sale Catalogue of Mr. Bullock's Collection, April, 1819, where, at page 32, lot 61, is "an undescribed Gull, much allied to the Arctic, but greatly superior in size, killed at Brighton"; and lot 62, "a second example of the same species, killed at Dover"; and a third is referred to as having been "killed near Liverpool," and then "in the collection of Lord Stanley." This species had already been characterized by Temminck (Manuel d'ornithologie, Ed. 1, p. 514, 1815), and by Brisson some fifty-five years earlier. Since its recognition as a visitor to our shores many more examples, most of them young birds, have been obtained; and this species is now known to be of tolerably regular occurrence. It appears to come down the lines of our eastern and western coasts in autumn, some remaining all the winter off our southern shores; and stragglers have been obtained far inland. At one time or another it has been obtained off nearly every maritime county of Scotland and England, being more abundant on the eastern than on the western side; but in the autumn of 1879 it appeared in most unusual numbers. The pages of 'The Zoologist' and other periodicals were full of records of its occurrence; and nowhere was it noticed in such profusion as off the coast of Yorkshire, where it was literally in thousands, especially on the 14th October, during a gale from N.N.E. On the 28th October, 1880, during a severe storm, another flight, small only by comparison, was noticed at Redcar.*

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* *Lestris pomarinus,* Temminck, Man. d'orn. p. 514 (1815); specific name amended to *pomatorhinus,* from πῶμα (operculum) and ῥίν (nasus), by Mr. Sclater (Ibis, 1862, p. 297).

In Ireland comparatively few examples, principally birds of the year, have been obtained at irregular intervals on various parts of the coast. On the 22nd of October, 1862, Mr. R. Warren witnessed a migration of this species in a south-westerly direction, at the Estuary of the Moy, and obtained two nearly adult specimens. The return migration in spring appears to pass to the eastward.

In the Færoe Islands this Skua has occurred in considerable numbers of late years, especially between August and October, 1873, as well as in 1874; it also visited that group on the spring migration of 1877, the fine adult now figured at the head of this article having been obtained on the 20th of May. Considerable flocks are annually observed on the coast of Norway in autumn and as late as June, but Mr. Collett has recently informed the Editor, that there is as yet no evidence of its having bred in any part of Scandinavia. In Spitsbergen it has seldom been identified, but the Rev. A. E. Eaton obtained it there in August; and on Parry's fourth voyage a bird of this species was observed by Ross flying past the boats in 82° N. lat. On Novaya Zemlya and the neighbouring coasts and islands it is common; Dr. O. Finsch observed it near the mouth of the Ob; and it doubtless occurs along the entire Arctic shores of Siberia, as Von Middendorff found it nesting in abundance on the *tundras* of the Taimyr in 74° N. lat. The 'Vega' expedition obtained it at Jinretlen in June, 1879, and from the description given by Pallas it is evident that it occurs in Kamtschatka. Mr. Nelson states (Cruise of the 'Corwin,' p. 110) that it breeds on both sides of Bering Sea, and considerable numbers were seen off Point Barrow. Bernard Ross observed it at the mouth of the Mackenzie River, and its range appears to extend along the greater part of the Arctic coast of America, although it was not observed in Smith Sound by Major Feilden. Sir James C. Ross mentions, in his last Appendix, that a nest with two eggs was found near Fury Point, on the margin of a small lake. Richardson says that it "is not uncommon in the northern outlets of Hudson's Bay, where it subsists on putrid flesh and other animal substances thrown up by the sea, and also on the matters which the Gulls disgorge when pursued by it. It retires from the north in the winter, and makes its first appearance at Hudson's Bay in May, coming in from seaward. The Indians abhor it, considering it to be a companion of the Esquimaux, and to partake of their evil qualities."

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* See T. H. Nelson (Zool. 1880, pp. 18 and 511), for Yorkshire; Cecil Smith (*tom. cit.* p. 19), for Somersetshire; M. A. Mathew, and J. Gatcombe (*tom. cit.* pp. 20, 21), for Devon and Cornwall; H. Stevenson (Tr. Norw. Soc. 1880, p. 99), for Norfolk; J. J. Dalgleish (Pr. N. H. Soc. Glasgow, iv. pt. ii. p. 274), for Scotland; not to mention others.

In Greenland it is said to breed in societies from Bjornenæs, north of Egedesminde, to the northward (Newton, B. of Greenland); and Mr. Ludwig Kumlien states (Bull. U.S. Nat. Mus. No. 15, p. 94) that many hundred pairs were nesting on an inaccessible cliff on Disco Island; but this assertion, like that of his reported discovery of the eggs of the Curlew Sandpiper, is uncorroborated, and is opposed to what we know of the breeding habits of this and other species of Skuas. Judging from the numbers observed on migration, the Pomatorhine Skua must have many other breeding-places within the Arctic circle, but those already mentioned are the only ones which can as yet be indicated with certainty.

Passing along the coasts of Western Europe on its regular migrations, this Skua is an occasional straggler to the Baltic, the interior of the Continent, the Mediterranean as far as Sicily and Malta, and the Bosphorus; and its course can be traced down the west coast of Africa as far as Walvisch Bay, in 23° S. lat. The late Major Tickell obtained an immature specimen at Moulmein, on the coast of Tenasserim, and a bird of the year was procured by Mr. Cockerell off Cape York, the northern extremity of Australia. Both adult and young birds have been recorded from Japan; also from the Aleutian Islands; and on the west coast of America two examples were obtained in Callao Bay, Peru, by Capt. A. H. Markham, R.N., in December, 1881 (P. Z. S. 1882, p. 527). On the eastern side of North America its migrations extend to Pennsylvania, and stragglers have visited the elevated inland lakes of Mexico.

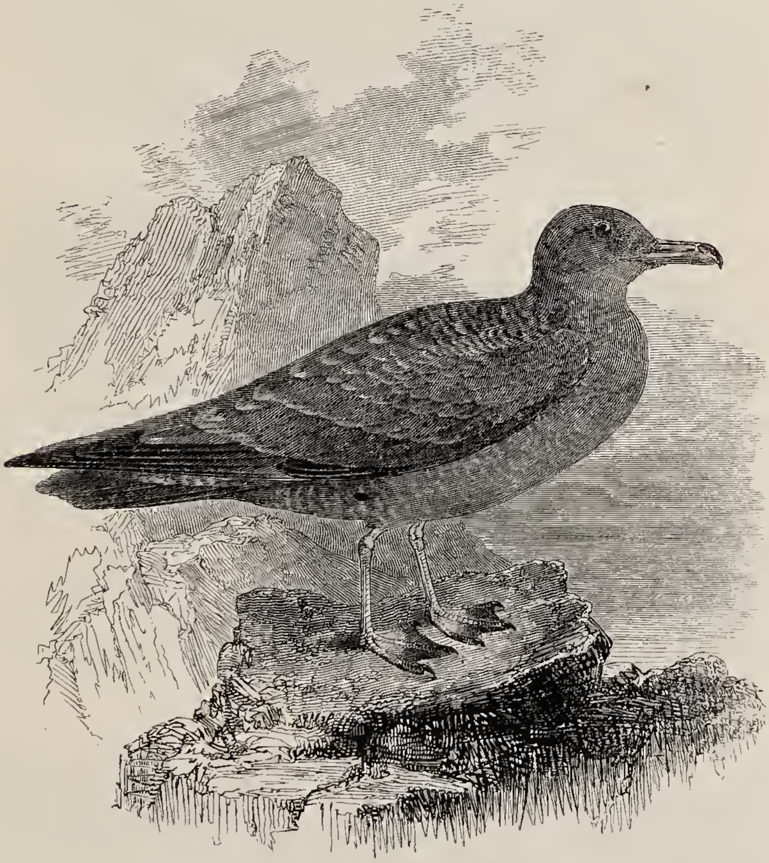
The Pomatorhine Skua is said by Von Middendorff to deposit two eggs in a mere depression of the moss on the *tundras* of the Taimyr in the month of July. One of the eggs taken by him is figured in his ‘Sibirische Reise,’ pl. xxiv. fig. i., and a better illustration is given by Prof. Newton (P. Z. S. 1861, pl. xxxix. fig. 3), from which it would appear that the colour is of an olive-brown with darker blotches, and the measurements about 2·45 by 1·7 in. Like the rest of the group, this Skua plunders the Terns and Gulls; devours any animal matter cast up by the sea, and the ‘krang’ of seals and whales; and also preys freely upon lemmings. Von Heuglin describes its call-note as a harsh *crah;* and he says that he frequently observed it swimming on the water.

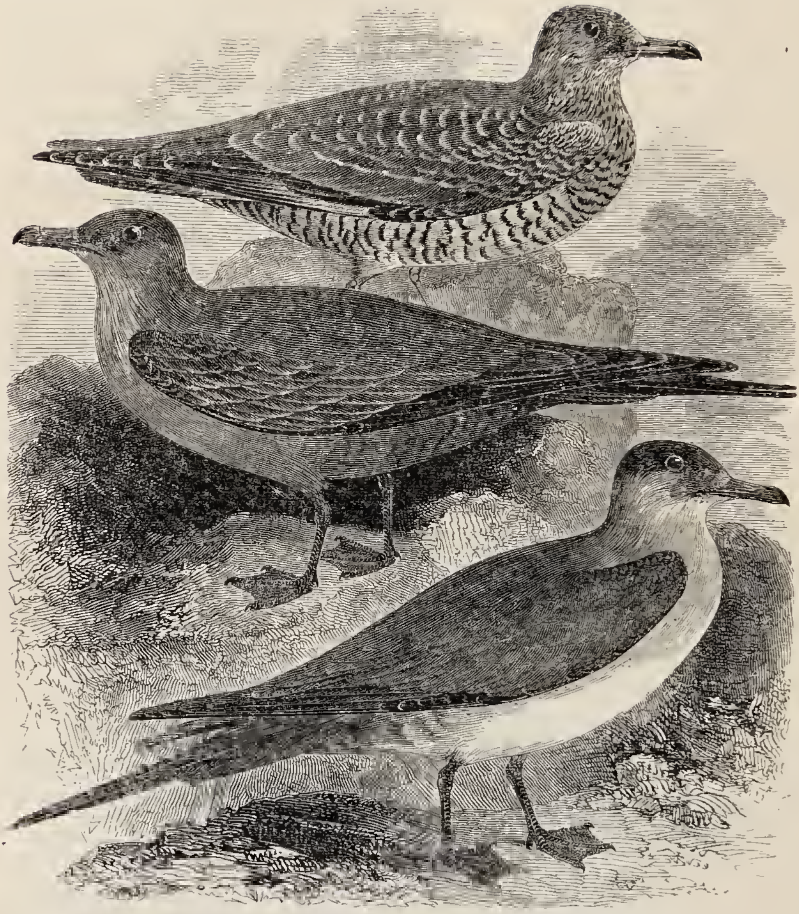
The adult bird has the bill dark horn-colour, black at the tip; irides brown; head from the base of the bill to the nape, of a deep blackish-brown; chin white; the acuminate feathers of the neck white, tinged with golden-yellow, sometimes extending so as to form a complete circlet; mantle, wings, and tail dark brown; the two central tail-feathers extending four inches beyond the others, and twisted vertically; shafts of the primaries white; underparts white in very old birds, and with more or less of a striated brown chest-band in others; under wing-coverts, lower abdomen and under tail-coverts dark brown; legs and feet black. The whole length twenty-one inches; wing from the anterior bend fourteen inches and a quarter.

In less mature birds the underparts are more or less striated; and examples have been obtained of a nearly uniform sooty-brown, with a yellow tint on the acuminate feathers of the neck, showing that they could not be very young birds. Mr. E. Booth, who kept one of these melanic forms alive for some time, has informed the Editor that it gradually became white on its underparts; but little is at present definitely known of the progressive stages of plumage in this species, or of the age at which it commences to breed. There is no external difference between the sexes.

In the young bird, from which the second figure is taken, the cere and base of the bill are greenish-brown, the curved point black; the irides very dark brown; feathers of the head and neck clove-brown, with narrow margins of wood-brown; back, scapulars, tertials, and upper tail-coverts umber-brown, each feather margined with wood-brown, these margins being broadest on the tertials, the lower part of the back, and the upper tail-coverts; great wing-coverts nearly uniform umber-brown; wing-primaries blackish-brown, the shafts of these feathers and a considerable portion of the inner webs white; tail-feathers umber-brown, the two middle tail-feathers in this young bird not more than half an inch longer than the next feather on each side; chin, throat, breast, belly, and vent mottled with buff-coloured brown, produced by narrow alternate transverse lines of clove-brown, and wood-brown; under tail-coverts broadly barred across with umber-brown and wood-brown; legs and base of the toes yellow, anterior part of the toes and their intervening membranes black. The transition in the colour of the legs and feet is very irregular, and Mr. Gatcombe informs the Editor that he had a specimen in which one leg was slate-blue below the tarsal joint, whilst the other was black.

The average weight of this Skua is 1 lb. 6 to 8 oz.





STERCORARIUS CREPIDATUS (Gmelin*).

THE ARCTIC OR RICHARDSON'S SKUA.†

Lestris Richardsonii.

OF the species of this genus which visit this country, the Arctic Skua is the most numerous. Pennant, in his time, found it breeding at the islands of Jura, Islay, and Rum, in the Hebrides; and at the present day there are, according to Mr. Gray, several colonies, some of them consisting of forty or fifty pairs, on North and South Uist, Stuala Island, Wiay, Benbecula, and one or two in Lewis. In the Orkneys this species has been observed on almost every island, but the principal breeding-places are in Hoy and the Holm of Eddy, or Eday, as mentioned by Mr. Salmon and Mr. Dunn. In the Shetland group, where this species is known as the 'Shooi' or 'Scoutie-Allen,' it breeds in considerable although decreasing numbers, on the islands of Unst, Yell, Fetlar, Noss, and Foula; arriving early in May, and leaving in August, or at latest in September. Mr. T. E. Buckley states (Pr. N. H. Soc. Glasgow, 1881, p. 148) that he understands, from Mr. Houston of Kintradwell, that a pair breed regularly on a piece of very boggy ground on his shooting; but Mr. Buckley adds that he has never personally seen the birds in Sutherland during the breeding-season, nor does he know of any one who has, except in the above-mentioned instance. Proof is wanting as regards its nesting on any other part of the mainland of Scotland; but on migration it is not unfrequent along the entire coast.

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* *Larus crepidatus*, Gmelin, Syst. Nat. i. p. 602 (1788), ex Banks, Hawksworth's Voy. ii. p. 15 (1773).

† The trivial name 'Richardson's Skua' is certainly distinctive, but as it was originally applied solely to the dark form, it appears preferable to call this species the 'Arctic Skua,' the name previously employed by Pennant, Montagu, Bewick, Fleming, Selby and others. The only drawback is that it has occasionally been conferred on the next species.

In Ireland it has been stated, although on insufficient evidence, to have bred near Achil Island; but it certainly occurs on migration, an exceptionally large flight in a south-westerly direction having been recorded by Mr. R. Warren as observed at the estuary of the Moy in October, 1851, the majority being adults. Some of them appeared fatigued, and would occasionally rest on the water for a few minutes, rising after a short interval and following the course of their companions. Although there were plenty of Gulls flying about while the Skuas were passing, the latter were not observed to chase any during their migration. Mr. Warren has also obtained specimens on the return passage in May.

On the coasts of England the Arctic Skua generally makes its appearance on the east coast in August, and is not uncommon from that month to October. It was unusually abundant off Yorkshire in the autumn of 1879, the year which was so remarkable for the visitation of the Pomatorhine Skua, and Mr. T. H. Nelson informs the Editor that, on the 12th July, 1881, he observed a flock of about 100 going north-west: an occurrence remarkable both as regards date and direction of flight. A few birds which are not breeding may from time to time be observed during the summer. On the south coast of England this species is less abundant, and to Cornwall its visits appear to be decidedly rare, nor is it of regular occurrence on the western side of our island. Stragglers, chiefly birds of the year, have been shot in several of our inland counties, generally in the vicinity of rivers or sheets of water. On the spring migration it is far less numerous than in autumn.

It is now well known that the Arctic Skua occurs under two very distinct plumages, even in the same breeding-places: one form being entirely sooty, and the other having light underparts. The white-breasted birds pair with whole-coloured birds as well as with those of their own variety, the dark-coloured birds also pairing together. Both the extreme forms, and the gradations resulting from their union, are found breeding on our northern islands, the Færoes, Iceland, the coasts of Norway, Sweden, Siberia, and, probably, on Novaya Zemlya; but on Spitsbergen neither Dr. Malmgren nor Prof. Newton observed a single specimen of the dark whole-coloured form, and all those which Admiral Collinson's and Dr. Rae's expeditions brought home from the far north of Arctic America were white-breasted birds, which looks as if the dark variety might be a more exclusively sub-arctic one. At all events, it seems tolerably well proved that whereas towards the southern limit of its breeding-range the dark form predominates, the white-breasted variety increases in proportion to the northwards, until it attains the ascendency. In America, below the Arctic Circle, both forms are met with, and it was, in fact, in the Hudson's Bay Territory that the dark specimen was obtained on which Swainson bestowed the name of *Lestris richardsonii*, in compliment to Sir John Richardson. As a breeding species the Arctic Skua may be broadly described as sub-arctic and circumpolar;

but although Parry found it up to 82° N. lat., Major Feilden, of H.M.S. 'Alert,' did not observe it in Smith Sound.

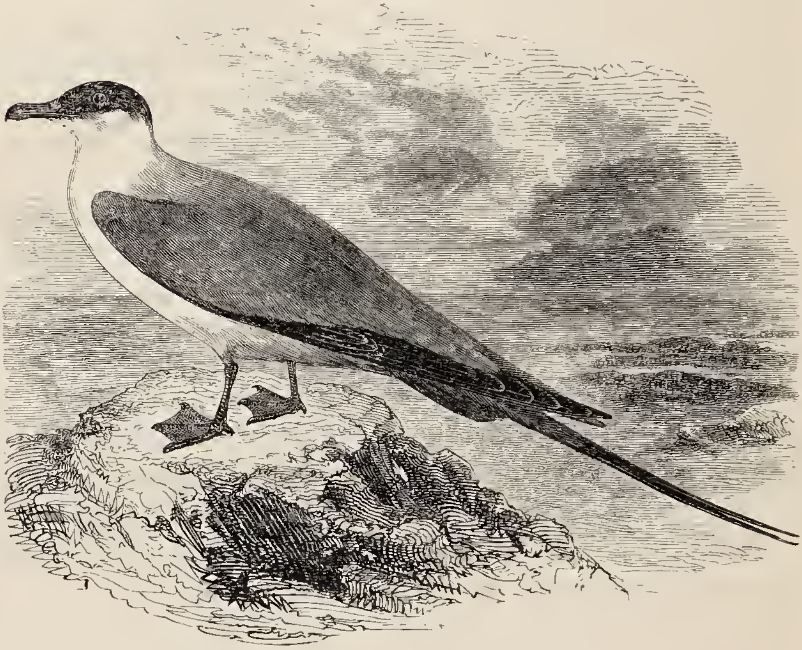
On migration this Skua visits the coasts of Europe, straggling across the Continent and into the Mediterranean, and continuing along the coast of Africa as far as the Cape of Good Hope, where it passes the months of our winter, obtaining its living by robbing the Terns and Gulls. It is of annual occurrence in the cold season in the Gulf of Oman, and along the Mekran coast, and the Editor believes that it is this species of Skua which has been obtained on several occasions in New Zealand by Mr. Buller. On the eastern side of America it has occurred as far south as Rio de Janeiro; and on the west it is recorded from the Prybilov Islands, Alaska, and both sides of Bering Sea and the North Pacific down to the Kuril Islands.

The Arctic Skua makes little or no nest, depositing its eggs in a hollow of the moorland moss; they are two in number, of a greenish-olive, spotted with dark brown, and measure about 2·3 by 1·6 in. In some instances the birds frequent the tops of the highest hills, breeding in societies of many pairs, in others they appear to prefer those unfrequented heaths which are low and marshy, but making their nest upon some slight but dry eminence. Mr. Salmon says, "When the female left her nest, we observed her endeavouring to decoy us away, by pretending to be lame, and tumbling about as if her wing were broken; and it was this circumstance that led us to look more attentively." In Norway, Mr. Hewitson says, these birds breed most commonly apart from each other, each pair taking possession of its separate island, upon the highest point of nearly all of which they are constantly to be seen perched, and upon it they usually lay their eggs; sometimes, however, choosing the lower grounds. Here, also, they are the persecutors of the other species of sea-fowl, even to sucking their eggs whenever their owners leave them uncovered. The flight of this species is rapid, although somewhat angular; and any intrusion upon the breeding-ground is resented by swoops, directed from behind or sideways; for although the bird will actually strike with its wing, the Editor has never seen it make the front-attack, so characteristic of the Great Skua. The cry is sometimes a plaintive *mee;* at others a sharp *mee-áwh.* This species feeds principally upon fish, obtained by robbing the smaller Gulls, but it preys upon any wounded or disabled birds which are not too big for it; and Lord Clermont states that an adult was shot on the 6th of June near the town of Newry when following a plough to pick up the worms. It does not dive, but it has frequently been observed to settle on the water.

The nestlings, which are covered with a sooty-black down, rather lighter on the underparts, turn on their backs and fight viciously with their feet when handled. When fledged, the offspring of two white-breasted birds is wood-brown about the head and neck; in the young of two sooty-coloured parents the prevailing hue is much darker; and where one of the old birds is dark and the other is light, there is a gradation of colour. Bearing this in mind, the following may be taken as a general description:—

The young bird during its first autumn and winter has the base of the beak and the cere brownish-grey; the anterior portion conspicuously curved and black; the irides dark brown; the head and neck pale brown, streaked with dark brown; the back, wing-coverts, and tertials umber-brown, margined with wood-brown; wing-primaries brownish-black, tipped with pale brown, the shafts of the two outer feathers white, of the others dusky; tail-feathers pale brown at the base, then brownish-black to the end; the central pair half an inch longer than the others; neck in front, breast, belly, and under tail-coverts pale yellowish wood-brown, mottled and transversely barred with umber-brown; legs and the base of the toes bluish at first, afterwards yellow, the ends of the toes and the anterior portion of the intervening membranes black, whence the name of Black-toed Gull; but this is only an indication of youth, for as the bird increases in age the yellow colour is lost by degrees. Later on the light brown margins to the feathers disappear. When the bird has acquired its full size it measures from the point of the beak to the end of the long feathers of the tail twenty inches, the central pair of tail-feathers being three inches longer than the next feather on each side; the wing, from the anterior bend to the end of the longest quill-feather, thirteen inches and three-quarters; the tarsus one inch and three-quarters; the middle toe and claw together the same length, or one inch and three-quarters.

After this stage a few hair-like yellow streaks appear on the sides of the neck; next, the sides of the neck become lighter in colour; and, advancing in age, the neck, all round, becomes white, tinged with yellow, the head remaining of the same colour as the back. In the pure dark form the underparts continue to be nearly as dark as the back, the acuminate feathers of the neck being of a golden bronze tint, but in examples of mixed parentage some lighter and slightly barred feathers are visible on the lower part of the breast. It is by no means uncommon to find one or more white feathers on the carpal joints.



Stercorarius parasiticus (Linnæus*).

THE LONG-TAILED OR BUFFON'S SKUA.

Lestris Buffonii.

This smallest species of the genus *Stercorarius*, although much more rare than the Arctic Skua, has occasionally been taken in this country, generally in autumn. It is distinctly circumpolar in its breeding-range, and although it has been said to nest sporadically in Caithness and the Orkneys, the evidence can hardly be considered conclusive. Mr. R. Gray states that in the summer of 1863 he examined a pair shot on the island of Wiay in the Hebrides, as they hovered over a marsh where there were nests of the Arctic Skua, and he considers it probable that they were breeding there. In the autumn stragglers occur on the coasts and islands of Scotland, but not in any numbers. On the east side of England it appears at irregular intervals, especially between the mouth of the Tees and Flamborough Head; and during the storms of the autumn of 1879, already noticed, a considerable number were obtained, some of them adults. Southwards its visits become rarer, and Mr. Cecil Smith can only cite two instances in Somersetshire; Mr. Gatcombe records an adult obtained at Plymouth some years ago*; and the late Mr. Rodd was only aware of two examples being met with in Cornwall, during his long experience, until 1877, when an adult bird, shot near the Lizard, was sent to Mr. Vingoe for preservation on the 4th of June—an unusually late date (Zool. 1877, p. 300). The western side of England appears to be seldom visited: in Lancashire, as Mr. F. S. Mitchell informs the Editor, three were shot on Grange sands the day the 'Royal Charter' was lost, and one at Ribble in March 1877. Occasionally it has been shot in several inland counties.

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* *Larus parasiticus*, Linnæus, Syst. Nat. Ed. 12, i. p. 226 (1766). The Editor believes that he has shown (P. Z. S. 1876, p. 327) that the description given by Linnæus can only apply to this species, although the name was subsequently transferred, most unfortunately and improperly, to the Arctic Skua.

In Ireland both adults and immature specimens have been obtained on the autumn, and more rarely on the spring migrations, in the counties of Donegal, Antrim, Dublin, Waterford, and Mayo; in the latter a nearly adult example was shot on a grouse-mountain as it rose from the carcase of a dead horse on which it had been feeding (Zool. 1877, p. 331).

The Long-tailed Skua is only a visitor to the Færoes, where it was unusually numerous in the autumn of 1873; and it has not been proved to breed in Iceland, although killed there as late as the 10th of June. A few pairs nest on the Dovrefjeld, in 62½° N. lat., and Wolley, Wheelwright and others found it breeding in considerable numbers far inland on the fells of Swedish Lapland. It has been observed at Spitsbergen, and, on his boat voyage, Parry remarked it up to 82° N. lat.; Capt. A. H. Markham, R.N., found it breeding on Novaya Zemlya, and its course can be traced along the coasts and 'tundras' of Siberia, where Von Middendorff obtained the first authenticated eggs on the Taimyr and the Boganida. It was noticed during the drift of the 'Jeannette' in the ice to the north of Wrangel Island, and, sparingly, in Bering Sea; also on the Prybilov and Kuril Islands. It appears to be generally distributed throughout the Arctic regions of America, having been found by Dall and Bannister in Alaska; by Surgeon Anderson, of H.M.S. 'Enterprise,' at Cambridge Bay; and by Bernard Ross on the Mackenzie River. Numerous specimens were brought home by the various Arctic expeditions, from Melville Peninsula, the North Georgian Islands, and Baffin Bay; and Major H. W. Feilden, of H.M.S. 'Alert,' found it in considerable numbers in Smith Sound in June, where it was the only species of Skua observed. It also breeds in Greenland.

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* Mr. Gatcombe informs the Editor that Mr. Gould's statement, purporting to be given on his authority (B. Gt. Brit. v.), as to the frequent occurrence of immature birds near Plymouth in autumn, must refer to the preceding species.

On migration this Skua can be traced along the coast of Europe as far as the Straits of Gibraltar, occasionally straggling far inland, and up the Mediterranean as far as Italy. On the east coast of America its range extends to 40° N. lat.; and there is a specimen in the Berlin Museum said to have been obtained "between the Sandwich Islands and the Philippines."

The eggs, usually two in number, are laid in a hollow in the fells, and are of an olive-green colour, blotched and scrolled towards the larger end with several shades of brown; they are, as a rule, smaller, greener, and taper more abruptly towards the smaller end than those of the Arctic Skua; average measurements 2 by 1·4 in. The parents defend their nests with the utmost bravery, and Major Feilden states that on several occasions he was obliged to protect himself from their attacks by striking them with his gun-barrel. Wheelwright, who has given an interesting account of the nidification and habits of this species in 'A Spring and Summer in Lapland,' says that their principal food appeared to be the common crowberry (*Empetrum nigrum*), a large kind of beetle, and small crustaceans, and he never found anything except crowberries in the young ones. In one adult he once saw the remains of a fell-lemming, and in another were those of a small mouse; but other observers have seen this species hunting systematically for lemmings, and Mr. Seebohm saw it carry off a wounded Dunlin. Its cry is a loud shriek, *i-i-i-ah, je-ah, je-oh, je-oh;* and its flight is lighter and more elegant than that of any other member of the genus.

In the adult bird the base of the bill, including the cere, is dark bluish-brown, the horny, curved point, black; irides brown; all the upper part of the head black; sides and back of the neck white, tinged with straw-yellow, sometimes in the form of a circlet; back, tertials, wing, and tail-coverts brownish-grey; primaries and tail-feathers almost black; chin, throat, and upper part of belly white; lower part of the belly, the vent, and under tail-coverts, light brownish-grey; legs lead-colour; toes and their membranes black, the colour of the legs and feet varying with the age of the bird, and being much spotted in immature specimens.

The whole length of the specimen described, from the point of the beak to the end of the tail-feather next the central pair, is thirteen inches and a half, the central feathers extending nine inches beyond; the wing, from the anterior bend to the end of the longest quill-feather, twelve inches; the tarsus one inch and a half; the middle toe and the claw rather shorter, or one inch and three-eighths. It is possible that the central rectrices may be somewhat longer in the male than in the female, but otherwise there is no difference in plumage between the sexes.* In the slightly immature bird there is an irregular chest-band of dark brown feathers; there are some grey-tipped feathers on the hind neck and mantle; the flanks, under and upper tail-coverts are striated with brown and white; and so are, in a smaller degree, the under wing-coverts.

Independently of the difference in measurements, adult birds of this species, compared with old ones of the Arctic Skua, have the head darker in colour, while the back is lighter. An unfailing distinction at all ages is to be found in the colour of the shafts of the primaries; in the Long-tailed Skua only the two outer ones on each side are white, and the others are dusky: in the Arctic Skua all the shafts are white.

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* Both species of pointed-tailed Skuas, and in fact almost all birds with a similar development, are called 'Bo'suns' by sailors, because they carry their 'marlin-spike,' the boatswain's emblem of office in the merchant service, as is the whistle in the navy.

The bird of the year is of a nearly uniform sooty-brown, lighter on the underparts, slightly striated on the flanks and tail-coverts. Some examples are darker than others, but no variation corresponding to that observed in the Arctic Skua is known in this species.

The late Mr. Gould states (B. of Gt. Brit. v.) that he has some reason to believe that after this species has done breeding it is rayed with brown and white after the manner of, but more conspicuously than in, the immature state; and he mentions a Cornish-killed example in the collection of Mr. Bond as bearing out these remarks. This specimen, which was shot at Mevagissey, has been kindly presented by Mr. Bond to the Editor, who has no doubt whatever that it is a nearly adult bird in the last stage before assuming its full plumage. Examples in this state are very rare in collections: the Editor has only seen the above, and one from the Kuril Islands, shot in the summer preceding its moult into fully adult plumage.

A nestling in half-down, obtained on Novaya Zemlya by Capt. A. H. Markham, R.N., and presented to the Editor by Major Feilden, is pale smoke-brown on the downy head and underparts, with very dark brown feathers tipped with rufous on the back and wings.

Woodfall & Kinder, Printers, Milford Lane, Strand, London, W.C.

Date Due

~~NOV 1 4 1973~~

bd CAT. NO. 23 233 PRINTED IN U.S.A.

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QL690 .G7Y2 1871 v. 3
Yarrell, William
A history of British birds.
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